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ABSTRACT

A study examined the attrition and persistence of students enrolled in adult basic education literacy programs. The study population consisted of 1,407 adult learners who had completed intake interviews and/or been enrolled in learning programs at the Technology for Literacy Center in St. Paul, Minnesota, during a two-year period. The dependent variable for the study was attrition/persistence. The independent variables consisted of six categories of variables relating to personal and demographic characteristics, initial goals at intake, educational history and achievement, current employment status, attitudes toward working with computers, and program of study. The 36 variables studied accounted for only 7.8 percent of the variance in attrition/persistence, and 22 variables accounted for less than 5 percent of the variance between program completers and leavers. The study findings were consistent with other research in that students who were unemployed but available for work were more likely to drop out than were other students and that obtaining a General Educational Development certificate is positively correlated with persistence. (Appendixes include the intake questionnaire and information release and information on the frequency distribution of independent study variables.) (MN)

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Attrition and Persistence in Adult Literacy Programs

A Thesis
Submitted to the Faculty of the Graduate School
of the University of Minnesota

by

John Bosma

in Partial Fulfillment of the Requirements
for the Degree of
Master of Arts

August 30, 1988

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Dedicated to the Memory
of my beloved friend and confident

Richard M. Teien

It is largely because of his encouragement
that I made the decision to return to graduate school

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Abstract

This study was designed to investigate attrition and persistence in ABE literacy programs. The approach of this study involved an analysis of data provided by 1407 students who had completed intake interviews and/or been enrolled in learning programs at the Technology Center for Literacy (TLC) during a two-year period.

The dependent variable for this study was attrition/persistence. The independent variables consisted of six categories of variables which related to students' personal and demographic characteristics, their initial goals at intake, their educational history and achievement, their current employment status, their attitudes and feelings about working with computers, and the program they were active in.

The study's first question investigated the degree of equivalence between the characteristics of dropouts and persisters. The results indicated that the 36 variables studied accounted for only 7.8 percent of the variance in attrition/persistence.

The study's second question investigated the degree of equivalence between the characteristics of non-participants and dropouts. Non-participants were defined as individuals who had less than 12 contact hours at TLC and dropouts were defined as individuals who had at least 12 contact hours but had not completed any of their personal goals. The results indicated that 22 variables accounted for less than 5 percent of the variance between groups.

The study's third question investigated the degree of equivalence between the characteristics of those still active and completions. Those still active were defined

as individuals who were still active in learning programs and completions were defined as individuals who had advanced to another program, passed a GED examination, completed all of their learning goals, or completed at least one TLC course. The results indicated that 20 variables accounted for approximately 9 percent of the variance between the two groups.

In addition, the study findings were consistent with other research, in that, students who were employed but available for work were more likely to drop out than other students, and that obtaining a GED is positively correlated with persistence.

CHAPTER I
Introduction

Illiteracy in the United States

One of the long-standing difficulties of addressing the illiteracy problem in the United States has, in part, stemmed from our inability to clearly define it. Estimates vary between less than 1 percent to as much as 50 percent depending on the criteria being used in the particular situation.

A number of studies conducted in the 1970's reported that over 57 million adults in the United States, 16 years of age and older, had less than a high school education. Another report in the early 1980's (Hunter and Harman, 1979; Wellborn, 1982) concluded that 23 million Americans (one in five) lack the reading and writing abilities needed to handle the minimal demands of daily living with an additional 30 million being only marginally capable of begin productive workers. These reports

indicate that more than one-third of adults in the United States have not completed high school, and that for those who have graduated, many have only the reading and writing skills of sixth graders.

The economic consequences of illiteracy are also high. Many of those who are functionally illiterate earn less than $5,000 annually, and at least $6 billion in welfare programs and unemployment compensation each year is directly related to illiteracy (Hunter and Harman, 1979; Wellborn, 1982). In addition, functionally illiterate adults also tend to have higher rates of unemployment than persons with higher reading levels (Sainty, 1971). While these figures reflect some of the direct financial consequences of illiteracy, it is estimated that $237 billion is lost in unrealized earnings every year due to illiteracy (Hunter and Harman, 1979; Wellborn, 1982).

Since the mid-1960's, ABE programs have provided educational opportunities for adults who have wanted to continue their formal education through the completion of 8th grade and in some cases high school. Although with varied results, adult literacy programs have generally been found to be cost-effective. The Office of Education reported that in one year alone nearly 108,000 enrollees in literacy training programs found employment or better jobs, and that 18,000 were removed from public assistance (Hunter and Harman, 1979; Wellborn, 1982). The New York State Adult Literacy Program reported a savings of more than $10 million for taxpayers (Carr, 1981) during the 1980-81 year. It has also been estimated that the benefit-cost ratio of literacy programs is nearly 6 to 1, signifying that benefits exceeded the costs by a factor of at least five.

Although ABE literacy programs have been found to be cost-effective and had positive achievements, only a fraction of the functionally illiterate adults in the United States are enrolled in literacy training programs in any given year (Comptroller General of the United States, 1975).

The Problem

In addition to the small number of learners enrolled in ABE programs, the number of adults helped by literacy training programs has been further reduced by high attrition rates. Numerous studies have reported overall dropout rates of 10-60 percent. Other studies have reported dropout rates of 50 percent during the first five weeks of ABE classes (Mezirow, Darkenwald, and Knox, 1975). Eighty percent of ABE administrators polled in 1975 listed attrition as a major obstacle to the success of their programs (Irish, 1975). In 1976, Niemi concluded that attrition is "one of the severest problems confronting adult education."

To address this issue, this study investigates the following question:

(1) What is the degree of equivalence between the characteristics of dropouts and persisters?

In addition to this question, this study will also explore two related questions, (1) Within the attrition category, what is the degree of equivalence between the characteristics of non-participants and dropouts? and (2) Within the persistence category, what is the degree of equivalence between the characteristics of those still active and completions? These comparisons will aid the interpretation of the study's central question.

Overview of the Methodology Used

This study involved an analysis of over 1400 ABE literacy students who had completed intake interviews and/or been enrolled in learning programs at the Technology for Literacy Center (TLC) during a two-year period. TLC is an experimental three-year literacy program which has combined the latest computer technology with adult basic skills instruction to teach adults whose reading and math skills are below a high school completion level. The general approach of this study was to compare the degree of equivalence between the characteristics of dropouts

and persisters. Using a discriminant function, comparisons were made between students' personal and demographic information, their progress and/or completion of learning objectives, their reasons for leaving the program, and their attitudes and feelings about working with computers.

Implications of the Study

While a substantial body of research has explored the reasons for high attrition rates in ABE programs, high attrition rates waste instructor/tutor and administrative efforts in addition to money in programs which are usually already understaffed and under-funded (Newman, 1982). To date, the attrition/persistence phenomenon has been studied from four basic theoretical perspectives: (1) the search for coinciding reasons as stated by students for dropping out of programs; (2) the search for particular personality/psychological traits correlated with attrition and persistence; (3) the search for analogous demographic backgrounds in dropouts and persisters; and (4) the congruence between student characteristics and ABE program characteristics.

At this time, there seems to be no "best way" of studying and predicting attrition in ABE literacy programs. Therefore, any insight which can be gained towards an early identification of potential dropouts could work to increase not only the retention rates of ABE students, but the cost-effectiveness of literacy training programs as well.

Organization of the Study

Chapter I has introduced the problem under examination and described the context for the study. The questions to be answered have also been listed.

Chapter II presents a review of relevant literature which describes the nature of adult literacy, the extent of the problem, the problems encountered in identifying

adult illiterates, the groups where illiteracy is typically found, the attrition/persistence problem, and the research which has been conducted on attrition and persistence.

Chapter III describes the research methodology employed in this study and describes the general approach to the study; the program, population, and sample; the blocking variables, the dependent variable, the method of analysis, and the limitations of the study.

Chapter IV presents the findings of the study in relation to the questions posed.

Chapter V summarizes the findings and discusses the implications of the study. Concluding remarks are offered.

CHAPTER II
Review of the Literature

This chapter examines the literature relevant to the questions posed by this study in an effort to help explain the study's focus and design. The chapter is divided into six major sections. The first section contains a discussion of the basic conceptual differences between conventional and functional literacy. Section two of the chapter examines the extent of the adult illiteracy problem, the numbers and statistics of adult illiteracy, and the societal impact of the adult illiteracy problem. Section three provides a discussion of the definitional and measurement problems encountered in identifying adult illiterates. The fourth section analyzes the groups most commonly found to be illiterate and presents a profile of the adult illiterate groups. Sections five and six include a discussion of the attrition/persistence problem in Adult Basic Education (ABE) literacy programs and a review of the

research on attrition and persistence. Specifically, comparisons will be drawn between the target and demand populations and the high attrition rates in ABE literacy programs which confront Adult Basic Education with its greatest threat to program effectiveness. The last section of the chapter synthesizes the research conducted on the attrition/persistence phenomenon in adult literacy programs. More specifically, this section examines the approaches which have been used to study attrition and persistence in adult literacy programs, the variables which have been identified in the research, and the related theoretical perspectives which have attempted to explain attrition and persistence in Adult Basic Education programs.

What is Adult Literacy?

At first glance one would not think that it would be particularly difficult to articulate just what behaviors are implied by the term "literacy." To say a person is literate would seem to assert that he/she can perform some set of reading tasks at some particular level of competency. At this point, then, all one should have to do is identify the various literacy behaviors required for some minimum level of competency in literacy. However, clarifying conceptual and operational definitions of literacy has not been simple. The task has been closely associated with the controversy that has questioned whether the reading act involves just word recognition behaviors--those skills involved in decoding written words into spoken words--or whether it also includes such behaviors as comprehending language, critically evaluating its truth and relevance, appreciating its aesthetic qualities, and so on.

A review of the controversy over reading skills behaviors can provide insight into the complexity of arriving at a definition of adult literacy. The publication of *Why Johnny Can't Read* by Rudolph Flesch (1955) brought the debate over reading behaviors and instruction into a full-blown public controversy. Flesch noted that

substantial numbers of children were unable to competently perform rudimentary reading behaviors like decoding written words into spoken words. This he attributed to a lack of phonics content in the reading curricula used in schools and to an emphasis on the higher level skills commonly referred to as comprehension, critical reading, and literacy appreciation. While Flesch had no intentions of portraying higher level skills as being unimportant, he did feel that higher level skills were of secondary priority in the sense that they could not be learned until the decoding skills had been mastered.

This earlier debate has continued in other forms among psychologists, linguists, and educators.[1] Psychologists and linguists argue that reading should be conceptualized as only those skills uniquely involved in decoding written language into spoken language and that any remaining skills should be labeled as thinking skills. On the other side of the argument, reading specialists believe in preparing students to cope effectively with the reading tasks encountered in the real world. When specialists analyze real world reading tasks, they see students who must learn not just the decoding behaviors but also the higher level skills. Consequently, they consider all these skills to be reading skills.

Conceptual struggles have also stalled consensus on a definition of adult literacy. On the one side, you have definitions of adult literacy and corresponding statistics which limit literacy to the basic lower level reading skills and the completion of basic units of educational achievement. This perspective is frequently referred to as **conventional literacy** or the "ability to read, write, and comprehend texts on familiar subjects and to understand whatever signs, labels, instructions, and directions are necessary to get along within one's environment" (Hunter and Harmon, 1979). On the other side of the debate, proponents contend that literacy includes not just the basic reading abilities required to get by in the adult's

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[1] For a more in depth discussion of the controversy over reading behaviors and instruction, see J. R. Bormuth, Defining and assessing literacy, Reading Research Quarterly, 1, 1973-1974, pp. 7-66.

immediate context, but also the conceptual thinking and critical evaluative skills needed for solving the problems they face in their daily lives. This perspective becomes **functional literacy**, or:

> the possession of skills perceived as necessary by particular persons and groups to fulfill their own self-determined objectives as family and community members, citizens, consumers, job-holders, and members of social, religious, or other associations of their choosing. This includes the ability to obtain information they want and to use that information for their own and others' well-being; the ability to read and write adequately to satisfy the requirements they set for themselves as being important for their own lives; the ability to deal positively with demands made on them by society; and the ability to solve the problems they face in their daily lives (Hunter and Harmon, 1979).

In essence, this section poses the question, "How well should a person be able to read in order to be considered literate?" What is important to note is that there probably is no current agreed upon definition of adult literacy, and the choice of behaviors to be included in a definition of adult literacy for most practicing adult educators is more than a matter of identifying which behaviors are truly reading behaviors. The selection of the behaviors to be included in a definition of adult literacy should depend upon consideration of the purpose that the definition is to serve; in other words:

> . . . [a] definition must be designed for the purpose to which it is to be put, and it correctness may be judged only in terms of how well it serves that purpose. Thus, when a definition of literacy is being developed, it would seem rational to state clearly the purpose of that definition, to derive from this statement a set of criteria for selecting and excluding behaviors, and then to select behaviors using these criteria (Bormuth, 1973-74).

The public has often used the term literacy to mean the ability to read and to write one's name as expressed in the UNESCO (1951) definition: "A person is literate who can with understanding both read and write a short, simple statement on his[/her] everyday life." The level of expectation in this perspective is obviously low. Hunter and Harmon (1979) have indicated that the proportion of the population in the United States which is able to fulfill that standard is unprecedented. However, in the past 40 years, society's expectations about the quality of education and the numbers of persons who should be educated in a

developed country such as the United States have risen considerably (Hunter and Harmon, 1979).

Whether an outgrowth of liberal social thought or practical aspects of being employed, the concept of functional literacy suggests that persons and societies need more than just basic reading skills. In 1956, Gray broadened his original definition of literacy to include when an individual "has acquired the knowledge and skills in reading and writing which enable him[/her] to engage effectively in all those activities in which literacy is normally assumed in his[/her] cultural group." The UNESCO definition of literacy in 1962 read as follows:

> A person is literate when he[/she] has acquired the essential knowledge and skills which enable him[/her] to engage in all those activities in which literacy is required for effective functioning in his[/her] group and community and whose attainments in reading, writing, and arithmetic make it possible for him[/her] to continue to use these skills toward his[/her] own and the community's development.

These latter and broader definitions of literacy include aspects of personal pride and dignity, the ability to support oneself and one's family, a sense of direction in life, and creative participation in the community and nation (Hunter and Harmon, 1979). As one views the set of skills and abilities required of adults in the industrialized, print-oriented nation the United States has become today, it seems, from this author's perspective, that the 1962 UNESCO definition of functional literacy most acutely represents the set of abilities and behaviors required for literacy in an industrialized culture.

The Extent of the Illiteracy Problem

A wide range of definitions and measurement methods has been used to assess the extent of adult illiteracy in the United States (Bormuth, 1973-74; Kirsch and Guthrie, 1977-78; Reder, Walton and Green, 1979). One of the long-standing difficulties of addressing functional illiteracy has, in part, stemmed from our inability to clearly define it.

Estimates vary between less than 1 percent to as much as 50 percent depending on the criteria being used in the particular situation. But regardless of the criteria used, the numbers are staggering. The two criteria most frequently used for defining illiteracy are (1) high school completion (i.e., 12 years of school), and (2) performance level (as measured by grade level equivalents). In 1974, the National Advisory Council on Adult Education (NACAE) reported that 57.6 million adults in the United States, 16 years of age and older, had less than a high school education. In the following year, the Comptroller General of the United States (1975) concurred with the NACAE figure. The figures do not stop here. Cross (1981) reported that 40 percent of the United States' population has less than a high school education.

Other reports (Hunter and Harman, 1979; Wellborn, 1982) have also concluded that 23 million Americans (one in five) lack the reading and writing abilities needed to handle the minimal demands of daily living with an additional 30 million being only marginally capable of being productive workers. Wellborn also indicated that more than 33 percent of adults in the United States have not completed high school, and that for those who have graduated, 13 percent have only the reading and writing skills of sixth graders.

The cost of illiteracy is also high. Seventy-five percent of those who are functionally illiterate earn less than $5,000 annually, and at least $6 billion in welfare programs and unemployment compensation each year is directly related to illiteracy (Hunter and Harman, 1979; Wellborn, 1982). Functionally illiterate adults also have significantly higher rates of unemployment than persons with higher reading levels (Sainty, 1971). While these figures reflect the direct financial consequences of illiteracy, it is estimated that $237 billion is lost in unrealized earnings every year due to illiteracy (Hunter and Harman, 1979; Wellborn, 1982).

Problems in Identifying Illiterates

A Lack of Standards for Quantifying Literacy or Classifying Persons

At this point in time, we still lack a viable and collaborated standard for quantifying literacy and for classifying persons in relation to a level of literacy. Hunter and Harman (1979) report that many persons in Third World nations function effectively in their societies even though they do not possess basic literacy skills. While this may be true for some individuals in the United States and other industrialized nations, the numbers decrease as the demands of complex technological societies increase their reach into more aspects of life. While it is relatively easy to assemble data on school completion records or to make distinctions of conventional literacy, the same is not true for data regarding functional literacy levels. For example, Reder (1985) contends that:

> No one really knows how many illiterate adults there are, because no consensual definition has been established, and . . . even if a standard definition were adopted and associated statistically with other socioeconomic indicators, the relationships would be difficult to interpret.

Many functional illiterates are far from dysfunctional in their own environments and are reluctant to trade the comfort of their environments in exchange for what many perceive the adult education programs to demand. Illiterates are often fully contributing, integral members of their respective communities and can participate in elaborate social networks in which they receive the help they need to handle written materials in exchange for other types of expertise they possess (Fingeret, 1983).

> Stereotyped ideas about 'functionally illiterate' adults, such as their being unable to read at all, or not having useful skills and being unable to cope in daily life (other than being able to 'hide' their illiteracy from others), or being ignorant about most matters, or unable to participate in most of society's activities are examples of unwarranted inferences and assumptions that have little empirical validity (Reder, 1985).

While the number of conventionally illiterate adults in the United States may be relatively easy to establish, the number of functionally illiterate adults is

dramatically altered by the degree of specificity dictated in the definition, and in what context "functionally illiterate" is taken to mean.

A Lack in Consensus of What Constitutes an "Adult"

One rarely has to survey more than two statistical or research reports to find basic definitional differences of an "adult." While some studies have been based strictly on an age cutoff, others have also included school attendance considering persons as young as 14 years of age and out of school to be adults (Hunter and Harman, 1979). Other studies consider the self-supporting status of the individual in making distinctions of adulthood. But regardless of how well the various definitions may fit the particular contexts in which they have been derived, these differences make it difficult and somewhat risky to compare statistical compilations and to reconcile their implications to the larger population of illiterate adults throughout the United States.

A Lack of Accurate Population Statistical Reports

Perhaps one of the more unsettling moments for the United States Bureau of the Census was its discovery in 1973 that it had underestimated the total population by 5.3 million in the 1970 U.S. census (Hunter and Harman, 1979). Hunter and Harman (1979) report that an unknown number of illegal aliens was probably not included in the census figures, although some of them may turn up in educational statistics. The *New York Times* (1977) reported that the range in the number of illegal aliens living in the United States has been estimated to be from 2 million to 20 million, citing that "most prudent officials first settle on a figure of around 8 million, then qualify it by saying 'give or take 5 million'." The *Times* went on to report that the only solid indication that the population of illegal immigrants has been increasing is the sharp rise in the number being found and expelled each year by the Immigration and Naturalization Service. Whereas the service expelled 133,000 in 1966, the number expelled in 1978 was 793,000 (Hunter and Harman, 1979).

The Inconclusiveness of School-Leaving Statistics

Grade level equivalency has been generally accepted as a criterion for many years with the completion of secondary school viewed as a bench mark of functional literacy. Adults with less than four years of high school are generally considered to be educationally disadvantaged, and this group forms the "target population" for adult education programs. In 1966, the Adult Education Act, passed by Congress, stated as its purpose:

> the establishment of programs of adult public education that will enable all adults to continue their education [to at least the level of completion of secondary school] and make available to them the means to secure training that will enable them to become more employable, productive, and responsible citizens" (Adult Education Act, Section 302, PL 91-230).

Most American studies of educational attainment use graduation from secondary school as the critical point. The 1974 National Advisory Council on Adult Education (NACAE) report is based on school completion figures. This report indicates that the target population is 57.6 million adults 16 years of age and older who have less than a high school education. The Bureau of the Census also presents figures based primarily on school completion data.

The available school-leaving statistics do not necessarily indicate the level of an individual's ability to read, write, or function in a social context. In effect, a level of educational attainment can rarely serve as a valid indicator of an individual's level of functional literacy. Fisher (1978) indicates that while the evidence is strong that the bulk of those who are functionally illiterate are found among persons who fail to graduate from high school, many who fail to graduate from high school are not functionally illiterate by any means. Statistical reports of school-completion reflect little more than school attendance, and grade-completion figures cannot guarantee that any degree of literacy has been achieved.

Although many of the individuals classified as "functionally illiterate" do have poor reading and writing skills, Sticht (1985) maintains that the majority of these individuals are not illiterate. They can and frequently do read written materials of

interest to them (although with some difficulty) and "use their . . . literacy skills to gain new knowledge by reading, writing, and interacting with knowledgeable teachers and peers."

Our most widely available statistics come from Bureau of the Census data. Individuals who state that they have completed sixth grade are classified as literate. As indicated by Hunter and Harman (1979), in the person-to-person sampling, "individual census-takers may, or may not, ask those who have not completed sixth grade whether they can read and write a simple message in any language." In any case, the census-taker must rely on what people say about their educational attainment, and the definitions are left to the census-taker and the respondent.

The Ambiguity of Competency Level Criteria

Competency criteria use basic performance measures to ascertain minimal competency levels. During the early 1970's, the use of grade level completion was criticized as an valid measure of ability to perform diverse literacy tasks. As a result, task performance approaches were developed for assessing literacy levels; the Harris studies (1970, 1971) were the first competency criteria approaches to measuring literacy levels. Commissioned by the National Reading Center, the 1971 Harris study was undertaken to measure the ability of adults to read and answer questions about a classified newspaper ad, a telephone directory, and a composite standard application form. The authors concluded that approximately 15 percent of adults in America have serious reading deficiencies.

The most well known competency criteria study of illiteracy is the Adult Performance Level (APL) study (Northcutt, 1975). The study used nationwide sampling techniques and designed a series of simulated real-world items to test individuals' ability to function regardless of their level of academic achievement. The APL study estimated that roughly 57 million Americans do not have skills adequate to perform basic tasks. Based on the data, it was estimated that 23 million lacked the competencies to function in the society (APL category 1), and that an

additional 34 million were able to function, but not proficiently (APL category 2). Although, the APL study has been criticized for methodological errors and misinterpretation of its results (Griffith and Cervero, 1977), it has served as a model for attempts to define and measure functional literacy in terms of skills and competencies.

Compounding Factors of Bias

In any research project undertaken, the values of the individuals involved in the study are reflected in decisions and choices made during the project and in conclusions drawn from the results. The choice of problem, the approach to it, and the interpretation of the findings inevitably reflect the value assumptions and preferences that the investigator brings to his or her research. Anderson and Ball (1978), suggest that "the values, predispositions, and preferences of . . . [the researcher] . . . play a prominent role in determining the design of . . . the measures, the kinds of analysis, and the interpretation." Whether the influence of individual values and standards is conscious or unconscious, bias is a confounding factor having an impact on statistics, definitions, and standards of measurement.

Bias, however, is not limited to just those immediately involved in a given project; it also occurs among survey-designers, questionnaire-writers, and even the publishers of tests and other various materials which may be used in a research venture. While there is no way to remove the researcher's values, predispositions, preferences, and training from the research process, it is also important for the researcher to disclose how these values may have influenced the design, measurement procedures, analyses, and interpretations of the study.

Who Are the Adult Illiterates?

Within any society, and particularly one as large and diverse as the United States, one finds a plethora of different groups. While these groups undoubtedly

share many characteristics and needs as a result of common membership in the same country, there are also contextual influences and conditions which cohere to retain each group's unique entity. As societies become classified into groups, it can be easy to loose sight of the uniqueness of individuals within each group, or to take into account the specific situations in which people, regardless of their group of origin or membership, function during one or another part of their lives. As a result, the misevaluation of "indiscrimination"[2] can occur when we focus on classes of individuals or objects or events, and fail to see that subgroups within each group are unique, that individuals within each subgroup are different, and each needs to be looked at individually.

Illiterates compromise one such group. The people in this group have been described in a variety of ways, such as illiterate, functionally illiterate, functionally incompetent, educationally disadvantaged, or undereducated. These terms are evaluative labels which classifiers use to deal with the complexity of the situation and to put order into their thinking. A problem arises when these evaluative labels are used to describe the entire group of illiterates without taking into account the incredible diversity of the persons being classified under this single label.

Many myths still exist which equate illiteracy with personal inadequacies and promoters of literacy programs have sometimes tended to disregard what individuals and groups themselves need or want as they have imposed programs on groups for their "own good." It seems unlikely that people in any of these groups would use the term "illiterate" to describe themselves, although they may feel that they are powerless at times and at a disadvantage with respect to certain benefits of the

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[2] Indiscrimination is a denial of another's uniqueness. Devito (1983) posits that this misevaluation is at the heart of the common practice of stereotyping national, racial, and religious groups. A stereotype is a relatively fixed mental picture of some group that is applied to each individual of the group without regard to his or her unique qualities. While stereotypes are usually thought of as negative, they may also be positive. But regardless of whether such stereotypes are positive or negative, the problems they create are the same. They provide us with shortcuts of classification that are usually inappropriate. It should be emphasized that indiscrimination and classification are not the same. Classifying helps us to deal with complexity and put order into our thinking. The problem arises not from classification in itself but from our classifying, then applying some evaluative label to that class, and then utilizing that evaluative label as an "adequate" map for each individual in the group.

society. They may even experience frustrations in their ability to achieve basic personal and work-related goals. However, it is essential to understand that how one views these groups is relative to both the specific group of persons under scrutiny and their contextually determined requirements for participation and functioning.

In this section, data are presented to provide an understanding about who the adult illiterates in American society are. The data have been assembled from the available statistics by relating educational attainment to areas of economic status, regional location, age, sex, ethnic background and origin, and urban and rural distribution. While the data have been obtained from a variety of sources, four sources were used extensively: (1) the 1970 Survival Literacy Study and 1971 follow-up study conducted by Louis Harris and Associates, Inc.; (2) the Adult Performance Level (APL) Study conducted by the University of Texas at Austin from 1971 through 1975; (3) the ongoing surveys of the Bureau of the Census; and (4) the ongoing surveys of the National Center for Education Statistics (NCES). Despite the inaccuracies, cultural biases, distortions, and sometimes contradictory conclusions which exist in the data, they do present a general picture of adult illiterates in American society.

Adult illiterates come from every conceivable demographic group. Groups with high rates of illiteracy are: (1) Persons Near and Below the Poverty Level, (2) Racial and Ethnic Minorities, (3) The Unemployed, (4) The Elderly, (5) Women, (6) The Imprisoned, and (7) Residents of the South.[3] The overlap between individuals in these groups is considerable, for example, minorities are often poor and unemployed.

The Population Near and Below the Poverty Level

"Poverty" cannot be easily defined. Discrete boundaries and definitions of "poverty" and/or "nonpoverty" status do not exist anymore than do clear boundaries

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[3] Some of these organizational categories were originally used by Hunter, C.S. and Harman, D., Adult illiteracy in the United States, (New York: McGraw-Hill).

and definitions of a "literate" and/or "illiterate" status. The Bureau of Census systematically presents detailed social and economic characteristics of the U.S. population below the poverty level[4] as listed in the P-60 Series of *Current Population Reports*[5]. The number of persons below the poverty level in 1984 was 33.7 million, a decline from 35.3 million in 1983. The poverty rate during the same period fell from 15.2 to 14.4 percent, the first statistically significant decline in nine years. Table 2.1 summarizes the persons and families below the poverty level in 1984.

The poverty rate for whites was 11.5 percent, and the rate for blacks was 33.8 percent. But while the poverty rates for both whites and blacks declined from 1983, the number of Spanish-origin persons below the poverty level increased slightly from 28.1 percent in 1983 to 28.4 percent in 1984.

About 7.3 million families were below the poverty level in 1984. Of that figure 3.5 million were married-couple families, and 3.5 million were families headed by a female householder.[6] In 1984, 35 percent of all families headed by women were below the poverty rate in comparison to only 7 percent of all married couple families. At the same time, 42 percent of all families headed by women were at or below the 125-percent poverty level as compared to only 11 percent of all other families.[7]

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[4] The poverty level consists of a set of dollar thresholds which vary by family size and composition. The poverty threshold for a family of four was $10,609 in 1984. The poverty thresholds are updated every year to reflect changes in the annual average Consumer Price Index. In this text, the terms "poor" and "below the poverty level" are used interchangeably.

[5] The estimates of poverty in this report are based solely on money income. The value of noncash benefits such as food stamps, Medicare, Medicaid, and public housing are not included as income for purposes of estimating the poverty population. Alternative experimental estimates of the poverty population for 1984, based on an income definition that includes values for selected noncash benefits, are shown in a separate report, Technical Paper 55, Estimates of Poverty Including the Value of Noncash Benefits: 1984.

[6] The householder is the first adult listed on the Current Population Survey questionnaire. The instructions call for listing first the person (or one of the persons) in whose name the home is owned or rented. If the house is owned jointly by a married couple, either the husband or the wife may be listed first, thereby becoming the reference person, or householder, to whom the relationship of the other household is recorded. One person in each household is designated as the householder. The number of householders, therefore, is equal to the number of households.

[7] Information obtained from Current Population Reports, Series P-60, No. 152, 1984, pp. 13-19.

Table 2.1 - Persons and Families Below the Poverty Level in 1984

Individual(s) or Group(s)	Number Below Poverty Level (in thousands)	Group Poverty Rate (percent)
Total Population:	33,700	14.4%
White	22,955	11.5
Black	9,490	33.8
Spanish origin*	4,806	28.4
Persons by Age:		
Under 15 years	11,455	22.2
15 to 24 years	6,581	17.0
25 to 44 years	7,938	11.0
45 to 54 years	2,100	9.4
55 to 59 years	1,131	9.9
60 to 64 years	1,167	10.9
65 years and older	3,330	12.4
By Region:		
Northeast	6,531	13.2
Midwest	8,303	14.1
South	12,792	16.2
West	6,074	13.1
Families:	7,277	11.6
Married-couple families	3,488	6.9
Male householder, no wife present	292	13.1
Female householder, no husband	3,498	34.5
Related Children Under 18 Years:	13,274	21.3
White	8,348	16.5
Black	4,392	46.5
Spanish Origin	2,351	39.0
In families	12,929	21.0
In unrelated subfamilies	345	60.8
Unrelated Individuals:	6,609	21.8
Male	2,575	18.7
Female	4,035	24.4

* Persons of Spanish origin may be of any race.
Information obtained from Current Population Reports, Series P-60, No. 152, 1984.

The poverty rate for white children under 18 years old decreased from 17.3 percent in 1983 to 16.5 percent in 1984, but there were no significant changes in the rates for either black or Spanish-origin children. In 1984, the poverty rate among black children was 46.5 percent and among children of Spanish-origin, it was 39

percent. For persons 65 years old and over, the poverty rate fell from 13.8 percent in 1983 to 12.4 percent in 1984.

In the South and West regions, both the number of persons below the poverty level and the poverty rate declined, while the Northeast and Midwest regions did notexperience any important changes. The region with the highest poverty rate was the South at a level of 16.2 percent. The National Center for Educational Statistics (NCES, 1984) cited 1981 Bureau of the Census data which indicated that of those persons 22 years of age and older who completed 5 years or less of school, 35.2 percent had incomes below the poverty level. The percentage below the poverty level steadily decreased as the number of years of education increased. Table 2.2 illustrates differences in the educational attainment of householders below the poverty level since 1975 for all races.

Table 2.2 - Educational Attainment of American Householders Below the Poverty Level in 1984

Level of Educational Attainment	1984	1980	1975
Percent with less than 8 years:			
All Races	25.4	23.9	21.1
White	22.2	20.6	18.5
Black	36.4	35.4	31.0
Spanish origin*	34.2	32.5	33.5

* Persons of Spanish origin may be of any race.
Information obtained from Current Population Reports, Series P-60, No. 152, 1984, pp. 13-19.

In the Harris (1971) study, 40 percent of those individuals reporting a poverty income were classified as functionally incompetent, compared to only 8 percent of those individuals with incomes of $15,000 or greater. The Harris study also found that income level was related to reading ability, with the most significant break occurring between those earning less than $5,000 and those earning more.

According to NCES (1983), the average annual income was $9,017 for men 25 years and older with less than 8 years of school. With 8 years of school, the income average increased to $11,376. The average income of men who completed 1-3 years of high school was $13,650, and those who completed 4 years of high school had an average annual income of $18,139, a figure over twice that of men with less than 8 years of school.

Racial and Ethnic Minorities

Illiteracy tends to be much more common among minority groups than among whites. The NCES (1984) report based on 1980 Census data indicates that the percentage of whites 25 years and older completing less than 9 years of school was 14.7, compared to 24.7 for blacks, and 40.5 for Hispanics. However, the median level of school completion has steadily increased for all racial groups in the past four decades. For blacks, the median level of school completion has risen from 5 years and 8 months in 1940 to 11 years in 1975 (Hunter and Harman, 1979). The gap between whites and blacks has gradually narrowed so that less than half a year's schooling now separates the medians of the two groups. However, the gap between whites and other minorities in 1984 was still one year and 4 months as is illustrated in Table 2.3

Table 2.3 - Years of School Completed by Persons 18 Years Old and Over In 1984

Racial Group	Median Number of School Years Completed	Percent Completed		
		High School Graduate	1 Year or More of College	4 Years or More of College
Whites	12.4	69.2	30.5	14.6
Blacks	12.0	50.0	18.7	6.5
Other Minorities	11.0	43.4	16.4	5.4

Information obtained from Current Population Reports, Series P-20, 1984.

The median[8] income for all Americans in 1984 was about $26,400, an increase of 100 percent in nine years. As displayed in Table 2.4, the median income of blacks and Spanish-origin groups is far below the median income level of whites.

Table 2.4 - Median Family Income From 1970 to 1984

Median Income	1984	1980	1975	1970
All Races	$26,433	$21,023	$13,719	$ 9,867
White	27,686	21,904	14,268	10,236
Black	15,432	12,674	7,779	6,279
Spanish origin*	18,833	14,716	9,551	**

* Persons of Spanish origin may be of any race.
** Data not available.
Information obtained from Current Population Reports, Series P-60, No. 149, 1984, pp. 9-10.

Hunter and Harman (1979) report that hiring patterns seem to be related, not to the reading levels needed for job performance, but to the years of schooling completed. While the median years in school continue to become more balanced among the racial groups, whites still stay in school longer than blacks and other minorities. Though the income levels of minority groups rise as their educational levels increase, their incomes remain below those of whites of similar educational achievements (Hunter and Harman, 1979). Unemployment rates for high school drop-outs are also consistently higher for minorities than for whites as well (Hunter and Harman, 1979).

[8] The median income is the amount which divides the distribution into two equal groups, one having incomes above the median, and the other having incomes below the median.

The Unemployed

Illiteracy is higher among the unemployed and those employed in low-skill jobs than among the employed. The APL study (1977) estimated 36 percent of the individuals unemployed to be functionally incompetent as compared to only 15 percent of individuals employed. The Harris studies (1970, 1971) reported no findings related to employment. Bureau of Labor Statistics data published by NCES (1982) reported that in 1980 the unemployment rate was 8.5 percent for individuals 18 years old and over with 8 years or less of school, 11.3[9] percent for individuals with 1-3 years of high school, 6.5 percent for high school graduates, and 2.0 percent for college graduates.

The Elderly

Both illiteracy and poverty are high among the elderly. Bureau of the Census data for 1984 indicated that 21.2 percent of all persons 65 years and over live at or below the 125% poverty level. The poverty rate for elderly whites was 19.0 percent, the rate for elderly blacks was 45.6 percent, and the rate for elderly Spanish-origin was 34.7 percent.

The mean[10] income was less than $5,300 for householders 65 years and over below the poverty rate in 1984. Public assistance accounted for 47.5 percent of their total income, and supplemental security income accounted for 32.1 percent of total their income and the average annual income per family member was less than $1,900 (*Current Population Reports*, Series P-60, 1984).

Numerous sources also reveal the high illiteracy rates among the elderly. Bureau of the Census data for 1982 reported by NCES (1984) revealed that 39.4

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[9] Data which indicated a higher unemployment rate among high school dropouts than among individuals with less than eight years of education were also reported by Hunter and Harman (1979). The two possible explanations offered for this finding are that: (1) many individuals with less than eight years of school are not in the labor force at all, and (2) the on-the-job experience gained by early dropouts may offset the disadvantages of a lack of formal education.

[10] The mean income is the amount obtained by dividing the total income of a group by the number of families or unrelated individuals (as appropriate) in that group.

percent of persons 65 years and over had completed less than 9 years of school, as compared to 13.5 percent of persons 35-64 years, and 4.4 percent of persons 25-34 years. Census data indicated similar trends for the completion of 12 years of school with 55.9 percent of persons 65 and over having completed less than 12 years of school. The rate for persons 35-64 was 27.9 percent and the rate for persons 25-34 was 13.7 percent. Hunter and Harman (1979) reported that of those with less than a high school education, more than three-quarters of those 65 years and over have not completed grade school.

The educational attainment levels for older adults in the labor force is much the same. Census of the Population data (PC80-2-8B, 1980) revealed that 40 percent of working adults 55 years and older in 1979 had not completed high school. For the same group, over 21 percent had completed less than 8 years of school. The APL study (1977) estimated 35 percent of adults 60-65 years to be functionally incompetent, the highest percentage level of all the age groups studied. The lowest percentage of illiterates was found among persons 30-39 years at a rate of 11 percent. The Harris studies (1970, 1971) found similar results for older adults.

Women

The median level of school completion has historically been higher for women than it has for men. However, during the mid-1960's this pattern changed for whites.[11] Hunter and Harman (1979) reported that during the 60's the median grade level of school completion for white men jumped one-and-a-half levels from 10.8 to 12.2. By 1970, the median level of school completion for white men and women was the same. By 1978, white men were staying in school longer than white women. The median level of school completion for non-white women is still higher than they

[11] Between 1960 and 1970 white young men began staying in school longer than women. A widely held belief for this change is that whites were possibly trying to avoid or postpone being drafted especially during the years that the Viet Nam war was being escalated. Until the draft lottery was instituted in the late 1960's, it was possible to obtain a draft deferment while attending a four year educational institution.

are for non-white men.

Limited educational opportunities and limited experience outside the home also affect women. The situation is especially difficult for women who provide the sole support for their families. In information obtained from *Current Population Reports* (P-20, No. 149, 1984), 42 percent of all households headed by women are at or below the 125% poverty level, in comparison to only 13.5 percent for all other families. For black and Spanish-origin female householders, 62 percent are at or below the 125% poverty level. Table 2.5 provides additional comparisons between families with female householders to other families below the poverty level.

Table 2.5 - Mean Annual Earnings and Mean Hourly Earnings for Working Adults 55 Years and Older in 1979

Experienced Civilian Labor Force	Mean Hourly Earnings (dollars)		Mean Annual Income (dollars)	
	Male	Female	Male	Female
Persons 55 to 64 Years Old:				
0 to 8 years of school	$6.76	$4.10	$13,488	$ 6,597
1 to 3 years of high school	8.06	4.60	16,435	7,638
4 years of high school	9.03	5.35	18,932	9,124
Persons 65 Years and Older:				
0 to 8 years of school	5.35	3.76	7,723	4,592
1 to 3 years of high school	6.64	4.16	9,840	5,269
4 years of high school	7.92	4.84	12,413	6,450

Information obtained from 1980 Census of Population, (PC80-2-8B), 1980, p. 1.

Bureau of the Census data (1984) indicate that the median income of women is less than the median income of men. While women, in general, have attained relatively higher levels of schooling than men, they have not participated in the labor force nor commanded salaries commensurate with their education. The differences in pay based on sex are still larger than those based on race or national origin. This difference is particularly evident for working class women despite changes in federal

legislation and policy prohibiting discrimination in hiring and wages.

Hunter and Harman (1977) reported that for women with little formal education engaged in service jobs, the difference between their salaries and those of men in the same work was 63 percent. For sales workers the difference was 57 percent and for assembly-line workers 41 percent. The gap between women and men with five or more years of college is 35 percent, and for individuals with four years of high school the gap is 42 percent (Seifer, 1973).

Of all children living at or below the 125% poverty level, 61 percent live in families with female householders. The figure for black children is 74 percent and for Spanish-origin children is 76 percent.

The Imprisoned

In 1986, the number of prisoners behind bars in the United States topped 500,000, as compared to only 300,000 in 1977 (Mervis, 1986). Persons in prison and those who have been imprisoned generally have lower levels of education than the population at large (Hunter and Harman, 1979). While approximately 38 percent of the total adult population has not completed high school, the figure for those in prison and for those who have been imprisoned is 75 percent (Hunter and Harman, 1979). About one-quarter of all persons in prisons and jails are between the ages of 20 and 24. Exact percentages for the imprisoned are hard to determine because little information is available for the additional group of minors being held in facilities. What is evident is that the level of school completion and achievement for this group is far below that of the population at large.

Residents of the South

Individuals residing in the South tend to have higher illiteracy rates than individuals living in other geographic locations in the United States. In summarizing 1980 Census data, the NCES (1984) found that the percentage of illiteracy in 19 states was higher than the national average of 18.3 percent; the ten states with the

highest percentages of adults not having completed high school were all in the southern region of the United States. The APL study (1977) indicates in its final report that, "while all other regions of the country are estimated to have about 16 percent functionally incompetent adults, in the South, there are approximately 25 percent." The Harris studies (1970, 1971) also refer to an "intensity of the illiteracy problem in . . . the South." The 1970 study determined that the South had the highest rate of functional illiteracy followed closely by the East.

According to Bureau of the Census data, the APL study (1977), and the Harris studies (1970, 1971), illiteracy also tends to be more common among residents of rural areas than of urban or suburban areas. Hunter and Harman (1977) using Bureau of the Census 1976 data, reported that "in rural areas only about 46 percent complete high school, whereas in suburban areas, the percentage is 70; in central cities, 61." They also noted that "over 15 percent of adults in rural areas have not even completed grade school. . . of the total suburban population, only about 7 percent have not completed grade school."

The Attrition/Persistence Problem

Adult literacy programs take on a variety of forms and fulfill a wide diversity of needs for the learners enrolled in them. Hunter and Harman (1979) organize adult literacy programs and services into three categories: programs aimed at increasing conventional literacy skills, programs focused on increasing the functional concerns of ethnic or cultural subgroups, and programs that rely on broadcast media as their delivery system.[12]

Although with varied results, adult literacy programs have generally been found to be cost-effective. The Office of Education reported that in one year alone nearly 108,000 enrollees in literacy training programs found employment or better

[12] For a thorough discussion of the different types of programs and services available see C. S. Hunter and D. Harman, Adult illiteracy in the United States, New York: McGraw, 1979.

jobs, and that 18,000 were removed from public assistance (Wellborn, 1982). The New York State Adult Literacy Program reported during the 1980-81 year that the number of adult students completing an educational grade level was increased by 5816 over the previous year, while 1651 unemployed students obtained jobs--a savings of more than $10 million for taxpayers (Carr, 1981). The International Reading Association (1979) reported the benefit-cost ratio of literacy programs to be nearly 6 to 1, signifying that benefits exceeded the costs by a factor of at least five.

The term "target population" is frequently used to include all those who might be considered candidates for a certain program such as ABE. In this context, approximately 60 million American adults who have not completed high school can be designated as the target population of ABE programs. The term "demand population" refers to those actually enrolled in the program. For adult literacy programs in the United States, the demand population for any given year has been estimated to be between 2 and 4 million--a gap of over 50 million (Hunter and Harman, 1979).

Since 1965, ABE programs have provided educational opportunities for adults who have wanted to continue their formal education through the completion of 8th grade and in some cases high school. Although ABE literacy programs have been cost-effective and had positive achievements, only 4 percent of the functionally illiterate adults in the United States are enrolled in literacy training programs in any given year (Comptroller General of the United States, 1975). Cross (1981) also indicates that only 2 to 4 percent of the target population are being reached by Adult Basic Education programs in the country.

In addition to a small demand population, the number of adults helped by literacy training programs is further reduced by attrition rates of 40 to 60 percent (Cain and Whalen, 1979). Eighty percent of ABE administrators polled in 1975 listed attrition as a major obstacle to the success of their programs (Irish, 1975). In

1976, Niemi concluded that attrition is "one of the severest problems confronting adult education." Other studies (Mezirow, Darkenwald, and Knox, 1975) have reported dropout rates of 50 percent during the first five weeks of ABE classes.

While a substantial body of research[13] has explored the reasons for high attrition rates in ABE programs, high attrition rates waste instructor/tutor and administrative efforts in addition to money in programs which are usually already understaffed and underfunded (Newman, 1982). Therefore, any insight which can be gained towards an earlier identification of potential dropouts could work to increase not only the retention rates of ABE students, but the cost-effectiveness of literacy training programs as well.

Research on Attrition and Persistence

Most of the studies on attrition and persistence have gathered information from urban populations where a majority of the ABE students and centers are located. In 1964, Verner and Davis reviewed over 30 studies dealing with the subject of attrition and persistence and concluded that "the quantity of substantial research related to this particular aspect of the field [was] astonishingly small and inadequate." Though some insights have been gained, the reasons for ABE student attrition frequently remain "unknown." Attrition "is not usually a sudden event; often it is a gradual process . . . the student attending class less and less . . . and the instructor uncertain when the final severance" (Cramer, 1982) has taken place.

The non-school related reason most often given for ABE attrition is a job related conflict between work and class hours. Other non-school related reasons given are "child care, health, family problems, and moving; then, no transportation,

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[13] See for example, S. H. Cain, and B. A. Whalen, Adult Basic and Secondary Education Program Statistics, Fiscal Year 1976. Washington DC: National Center for Education Statistics (DHEW), Adult Vocational Education Surveys and Studies Branch, 1979. (ERIC Document Reproduction Service No. ED 178 765); and G. G. Darkenwald, and S. B. Merriam, Adult Education: Foundations of Practice, (New York: Harper & Row, Publishers, 1982).

not enough time, distance to class too far, financial problems, travel, apathy, and no need for more education" (Cramer, 1982). Cramer reports that the "single most often mentioned school-related cause for attrition is 'making no progress'." At any rate, the causes for attrition are usually multiple and complex.

As early as the 1960's (Verner and Davis, 1964), educators have recognized the need for more creative and systematic basic research on attrition and persistence in ABE literacy training programs. To date, the attrition/persistence phenomenon has been studied from four basic theoretical perspectives: (1) the search for coinciding reasons as stated by students for dropping out of programs; (2) the search for particular personality/psychological traits correlated with attrition and persistence; (3) the search for analogous demographic backgrounds in dropouts and persisters; and (4) the congruence between student characteristics and ABE program characteristics.

Studies Which Have Compiled Students' Reasons for Dropping Out

Numerous studies and programs have compiled statistics related to students' stated reasons for dropping out of ABE programs. A dropout survey used in 1974 to determine why only 38 percent of 1000 ABE students completed their studies found multiple variables for the interruption of studies (Meyer, 1974). The reasons given for dropout included health, living conditions, employment, transportation, and family problems. However, their responses indicated positive attitudes towards the center even when external factors made it necessary for the students to drop out of classes (Meyer, 1974).

In a similar study, Cramer (1982) concluded that a "great many" ABE students leave for unknown causes; when the reasons for dropout are known, many have reported conflicts with their jobs and the time of class and/or discouragement with their lack of progress. In a national survey conducted by the National Center for Education Statistics (NCES) in 1976 (Cain and Whalen, 1979), the reasons for

dropping out of ABE programs were "unknown" for over half (54 percent) of the 622,000 ABE students included in the study.

While aggregated statistics of students' stated reasons for dropping out of ABE programs have provided insights, the limitations of this approach also become apparent: (1) the reasons for why students have dropped out of ABE programs are often unknown, (2) students may or may not be aware of their real reasons for dropping out of an ABE program, and (3) students may be reluctant to share many of their real reasons.

Studies Focusing on Personality/Psychological Traits

A second approach to studying attrition and persistence in ABE programs has focused on identifying specific personality/psychological traits which may have high correlations with either attrition and/or persistence. This approach has attempted to identify behavior patterns and/or to predict specific behavior on the basis of correlations with personality variables that have been isolated by the investigator for analysis. For example, Parsons (1959) found that adults participated in adult education "to achieve future tangible goals which strengthen their external orientations to the work and social environments." Londoner (1972) concluded that perseverance and nonperseverance behaviors are functions of the importance the student attaches to educational goals.

In 1971, Sainty developed a dropout prediction model which found that the four predictor variables having the highest correlations with the criterion variable of dropout or completion were age, number of grades repeated, occupational status, and number of jobs held in the past year. Using the *Personality and Educational Environment Scales* (*PEES*) to measure ABE student attitudes, Boshier (1972) illustrated that students who consider a "persister" adult to be more worthy than a "dropout" adult were less inclined to drop-out of class than persons who regarded dropouts in the same or more positive light as persisters. With the *Adjective Check List* (*ACL*), Wilson (1980) found that dropouts tended to describe themselves as

more rebellious and hostile, less socialized, more impulsive, headstrong, and irresponsible as compared with persisters who tended to describe themselves as more obliging, tactful, diligent, practical, and compliant than dropouts.

Trait-oriented research has focused on other variables as well. For example, Donnaruma (1980) focused on field dependence-independence as a diagnostic variable in determining the needs of individual learners in adult education programs. In another study, Shipp (1981) studied psychographic variables (e.g., orientation to future or past, time perspective, rational vs. emotional orientation, sense of freedom and choice, reference groups, and action orientation) and their association with attrition and persistence. Other researchers (Moss, 1967; Grosskopf, 1978; Hunter & Harman, 1979; LaCagnina, 1979) have listed characteristics common to dropouts in ABE programs. Academically, dropouts tend to have a history of low achievement and a lack of success in their previous educational experiences, a lower ABE entry level, lower intelligence and reading ability, and completed fewer grades in school and repeated more (Sainty, 1971). Cross (1981) states that the amount of formal schooling is the one variable which positively influences persistence in ABE programs than any other.

These studies have all attempted to identify behavior patterns and/or to predict the behavior of ABE students based on a variety of isolated psychological variables. However, to use personality and/or psychological variables as exclusive predictors of ABE continuation does not allow for or include the situation-specific variables of the context, so it may be wise to proceed cautiously. As stated by Hall and Lindzey (1957), "small segments of behavior can be fully understood only when seen within the larger framework of the entire functioning organism."

Studies Focusing on Similar Student Demographics

A third body of research has focused on the demographic characteristics of ABE dropouts and persisters. Studies of this type have tried to identify likely program dropouts by collecting demographic information that is routinely and quickly

obtained at intake. This information can then be used in predicting an individual's subsequent persistence or attrition from the program before he/she has entered the program. Using a dropout prediction model, Sainty (1971) found that dropouts differed from persisters in that they were less intelligent, had lower reading and vocabulary levels, were younger, had completed fewer and repeated more grades at school, were from lower social and occupational positions, had fathers from a lower occupational class, had changed jobs more often than persisters, had lower pay rates in employment positions, and were less likely to speak a second language.

A study by Garry (1975) examined the relationship between life change and dropout behavior and concluded that there was a significant relationship between the amount of life change in adult students and their dropout behavior: the more life change experienced, the more likely a student will leave a program. Londoner (1972) found that age, marital status, income, and employment were positively correlated with persistence and concluded that age and marital status act as "pivotal linkages." More recently, in interviews conducted with 232 subjects, Shipp (1981) found:

> that income, education, age and occupational status were discriminating variables with less affluent, less educated, older individuals in low status occupations at the non-learner end of the continuum. The more affluent, better educated, younger individuals in higher status occupations [were] grouped at the active learner end of the continuum.

However, in a study of Ohio ABE programs, Weisel (1980) found that older students with lower reading, spelling, and math scores, from homes with low standards of living, and on some form of financial support tended to have lower attrition rates. Certain program characteristics (e.g., flexibility in class scheduling, staff communication, and short student intake procedures) were also found to be related positively to student retention in their programs.

Some researchers have even gone as far as to recommend that ABE programs build structural barriers into intake procedures in order to filter out less committed students from ABE programs. For example, Diekhoff and Diekhoff (1984) suggest that individuals entering literacy programs be asked to demonstrate a level of

commitment to the program before being assigned a tutor and that students go through some time period (e.g., 4 weeks) between the intake interview and the assignment to a tutor. While making extra efforts to keep students in the program once they have been matched with tutors, potential dropouts could be given ample opportunities to dropout before being assigned a tutor.

Demographic profiling can be a starting point for creating generalizations about a population being studied and they may also be useful to policy makers and decision-makers in the context. However, it must also be kept in mind that profiles represent only approximations of knowledge, and that they can frequently serve little use other than to provide general descriptive information about a particular population.

Studies Which Have Focused on Student and Program Congruence

A final body of research has focused on the congruence between student and ABE program characteristics. A major theme of this research has been that the reasons for attrition and non-participation do not reside exclusively within the student. This perspective contends that ABE administrators need to match their programs and educational environments with the participants they are working with, and that attrition will be reduced as better "matches" are developed between the two.

Boshier (1973) concluded that the single social, psychological, and institutional variables typically discussed in dropout studies "mediate the congruence/dropout relationship," and that no one variable can account for a substantial portion of dropout variance. Boggs (1974) contends that dropout behavior is affected by the student's current situation--the social and non-social constraints and pressures which have limited the alternatives available for the ABE student. Darkenwald (1975) has attributed low attrition rates to "meaningful cultural dialogue between [the] teacher and student" and suggests that this is a critical segment in reducing ABE attrition.

Though the congruence/dropout model has not been researched as extensively as the other theoretical perspectives used to explain the attrition/persistence

phenomenon, there are several insights which can be offered to ABE administrators. Studies have found that teachers who place emphasis on relevant subjects such as coping skills and performance skills tend to have fewer dropouts and lower rates of absenteeism (Mezirow, Darkenwald, and Knox, 1975; Darkenwald, 1975). This perspective can perhaps be best portrayed in the following words:

> The starting point for organizing the program content of education . . . must be the present, existential, concrete situation, reflecting the aspirations of the people. (Freire, 1971).

Although most ABE teachers and administrators have continued to place a great deal of emphasis on basic reading, language, and arithmetic skills (Mezirow, Darkenwald, and Knox, 1975), there is also increasing awareness that the objectives of ABE instruction need to be broadened in order to make them more relevant to the immediate needs of many of the students enrolling in ABE programs (Irish, 1975). If ABE programs are to work effectively with illiterate adults, proponents of this branch of research argue that ABE educators must begin with more of an awareness and sensitivity to the cultural characteristics.

In summary, there seems to be no "best way" of studying and predicting attrition and persistence in ABE literacy programs. While studies focusing on compiled lists of students' stated reasons for dropping out of ABE programs have provided us with some insights, the validity of the reasons given must be assessed carefully. In studies which have attempted to isolate personality and psychological characteristics, the impact of situation-specific variables in the context has remained largely unknown at this point. Studies of student demographics have provided us with information about many different ABE student populations; but, demographics alone serve little use other than to provide general descriptive information about particular populations. Though fewer in number, program and student congruence studies have challenged ABE administrators and programs to become more aware of and sensitive to the cultural characteristics of given ABE populations.

Chapter Summary

The first section of this chapter posed the question, "How well should a person be able to read in order to be considered literate?" In a review of some of basic conceptual differences between conventional and functional literacy, it was concluded that a definition of adult literacy should include not only the basic reading abilities required to get by in the immediate context, but also the conceptual thinking and critical evaluative skills needed for solving the problems individuals face in their daily lives.

In the second section of the chapter, the staggering numbers of adults in the United States who have less than a high school education were reviewed. In addition, documentation of adults who lack adequate reading and writing abilities needed for the minimal demands of daily living was presented. Although school and grade completion figures are easier to obtain and verify than measures of functional levels, school and grade completion figures alone can not be considered reliable determinants of performance or ability.

Third, adult illiterates were profiled realizing that how one views various groups is relative to both the specific group of persons under scrutiny and their contextually determined requirements for participation and functioning. While adult illiterates come from every conceivable demographic group, groups with high rates of illiteracy are persons near and below the poverty level, racial and ethnic minorities, the unemployed, the elderly, women, the imprisoned, and residents of the South.

In the fourth section, a brief overview was given of the attrition and persistence problem in Adult Basic Education literacy programs. Since ABE programs were first inaugurated in 1964, they have generally been found to be cost-effective, to take on a variety of forms, and to fulfill a wide diversity of needs for the learners enrolled in them. However, it is estimated that only 2 to 4 million of the 57 million adults targeted for ABE programs are actually enrolled in programs. In

addition to the small enrollment numbers, the number of adults helped by literacy training programs is further reduced by attrition rates of 40 to 60 percent. The attrition rates are so severe that as much as 80 percent of ABE administrators have listed attrition as a major obstacle to the success of their programs.

The last section of the chapter surveyed research which has investigated attrition and persistence in ABE literacy programs. Although attrition and persistence have been explored from four basic theoretical perspectives, there seems to be no best way of studying and predicting either student outcome.

CHAPTER III
Research Methodology

It has been estimated that one in five adults in the United States lacks the reading and writing skills needed to function effectively with the demands of daily life (Hunter and Harman, 1979; Wellborn, 1982). When those figures are correlated to the seven-county Minneapolis/St. Paul area, approximately 225,000 adults may be considered functionally illiterate.[14]

While previous research efforts have determined that adult literacy training programs are cost-effective (International Reading Association, 1979), only 2 to 4 percent of the target population is being reached by such programs (Comptroller General of the United States, 1975; Cross, 1981). Reports have also indicated that

[14] Figure obtained from Technology for Literacy Project, 1985.

the number of adults being helped by literacy programs is further cut by high attrition rates of 40 to 60 percent (Cain and Whalen, 1979).

In the second chapter we examined four basic theoretical perspectives from which the attrition/persistence phenomenon has been studied: (1) the search for coinciding reasons as stated by students for dropping out of programs; (2) the search for particular personality/psychological traits correlated with attrition and persistence; (3) the search for analogous demographic backgrounds in dropouts and persisters; and (4) the congruence between student characteristics and ABE characteristics. In summary, it was concluded that there seems to be no "best way" of studying and predicting attrition in ABE literacy programs.

While studies focusing on compiled lists of students' stated reasons for dropping out of ABE programs have provided some insights, the validity of the reasons given needs to be evaluated carefully. The limitations of this approach also become apparent: (1) the reasons for why students have dropped out of ABE programs are often unknown, (2) students may or may not be aware of their real reasons for dropping out of ABE programs, and (3) students may be reluctant to share many of their real reasons.

Studies of personality and psychological characteristics have helped develop psychographic profiles of dropouts and persisters. However, to use personality and/or psychological variables as exclusive predictors of ABE continuation does not allow for or include the situation-specific variables of the context, so it may be wise to proceed cautiously.

Demographic profiling can be a starting point for creating generalizations about a population being studied and they may also be useful to policy makers and decision-makers in the context. However, it must also be kept in mind that profiles represent only approximations of knowledge about a population, and that they can frequently serve little use other than to provide general descriptive information about a particular population.

Though the congruence/dropout model has not been researched as extensively as the other theoretical perspectives, studies have found that teachers who place emphasis on relevant subjects such as coping skills and performance skills tend to have fewer dropouts and lower rates of absenteeism (Mezirow, Darkenwald, and Knox, 1975; Darkenwald, 1975).

This study was designed to investigate the degree of equivalence between the characteristics of dropouts and persisters. This chapter includes a discussion of: the general approach to the study; the program, population and sample; the blocking variables; the dependent variable; the method of analysis; and the limitations of the study.

General Approach to the Study

This investigation combines three of the four research perspectives (no attempt is made to identify specific personality/psychological traits). The study involves an analysis of 1407 students who had completed intake interviews and/or have been enrolled in learning programs at the Technology for Literacy Center (TLC) as of November, 1987.

The purposes of this study were (1) to determine the degree of equivalence between the characteristics of dropouts and persisters and (2) to reveal the degree of association between students' characteristics and attrition/persistence when correlated. In this study, comparisons were made between students' personal and demographic information, their progress and/or completion of learning objectives, their reasons for leaving the program, and their attitudes and feelings about working with computers.

This study was designed to answer the following question: What is the degree of equivalence between the characteristics of dropouts and persisters?

The Program, Population, and Sample

The Program[15]

In January, 1985, the Technology for Literacy Center (TLC) was established in the St. Paul, Minnesota, public schools to address the issue of adult literacy in the state of Minnesota. While computers and other forms of technology have been incorporated into both public school and college instruction, the application of this technology to the problem of adult functional illiteracy has not yet been fully explored. TLC is an experimental three-year literacy program which has combined the latest computer technology with adult basic skills instruction to teach adults whose reading and math skills are below the sixth grade level. More specifically, the purpose of TLC has been to improve the literacy level of adults residing and/or working in the Ramsey, Dakota and Washington county areas.

The Technology for Literacy Center has been funded and sponsored by the F. R. Bigelow Foundation, St. Paul Foundation, Mardag Foundation, Northwest Area Foundation, Cowles Media Foundation, and the St. Paul Public Schools. Throughout TLC's operation, the St. Paul Public Schools Department of Community Education has been responsible for the administration of TLC. The Project Manager of TLC is responsible to the St. Paul School's Director of Community Education and project staff members are employees of the St. Paul Public Schools. Other groups involved in the operation of TLC are (1) a Donor Review Board which has final approval on Project policy, (2) a Program Advisory Committee which makes recommendations regarding Project implementation and provides a liaison with education/service/governmental organizations interested in adult literacy, and (3) various subcommittees which bring special expertise to the Project components.

In addition to serving basic skill needs of functionally illiterate adults in the tri-county area, TLC expects to have trained 200 teachers in technology-assisted

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[15] Material in this section obtained from materials provided from Technology for Literacy Project.

instruction during the three year period. TLC has also provided an impetus for research in the area of adult functional illiteracy, and for other projects to incorporate computer technology into their literacy programs.

Target Population

The target population for the Technology for Literacy Center includes adults 18 years of age and over who reside and/or work in the Ramsey, Dakota and Washington county areas. Priority is given to English speaking adults with reading and math skills below the high school completion level. Within the seven county Minneapolis/St. Paul metropolitan area alone, TLC has estimated that there are approximately 225,000 adults who may be considered functionally illiterate.

TLC was originally projected to serve 1,300 students during its three year period, with 300 students projected to be served in the first year and an additional 500 students to be served in each subsequent year of operation. However, within the first nine months of operation, TLC had already enrolled 654 students. As of September 30, 1987, the figure was 1527.

When students enter programs at TLC, they are first given an intake interview which is administered by a teacher. During the interview, students are asked to provide certain personal and demographic information, their initial reasons/goals for coming to TLC, and their educational history and achievement. They are also asked to provide additional information related to their past and current employment, and their attitudes and feelings about working with computers. See Appendix A for a complete list of the questions and information asked during the intake interview.

As a part of the intake interview, students are then given the Wide Range Achievement Test (WRAT). The WRAT is used as a brief preliminary testing measure to determine an approximate grade level equivalent of the student. For a more specific placement, students are then administered the Test of Adult Basic Education (TABE). If the student's test results on the WRAT and TABE are below a 4th grade level, he/she is placed in a Laubach program which is intended for

learners with abilities below the 4th grade level. In the Laubach program, students learn with the assistance of an individual tutor; computer-assisted instruction (CAI) is also a part of the instructional program. If the student's test results on the WRAT and TABE are above the 4th grade level, they are placed in the regular programs which are more heavily oriented towards CAI.

In addition to the intake and testing data, TLC has maintained individual logs of students' study time in the different subject/program areas, and the completion of their personal objectives from their date of entry into the program. More specifically, each time a student has visited TLC, the amount of time spent on each content/subject area has been recorded along with the time spent on the computer in addition to the total amount of time spent at TLC for that particular visit. In order to facilitate record keeping procedures for recording the times logged by students, figures have been systematically rounded off to the nearest 1/4 hour.

The Sample

Records obtained from TLC were used to compile a list of all individuals who had completed intake interviews at TLC since the project began. As a part of the regular intake procedures, new students are specifically asked whether the personal information they have provided TLC can be used for research purposes provided their name or identifying information is not given out. Only 120 individuals answered "no" to this question; thus the final size of our sample was 1407 individuals.

Personal and Demographic Information

Overall, the number of males and females included in the sample group was equal (49.5 percent were female; 50.5 percent were male). The ages of students seeking admission to TLC ranged from the mid-teens to late 60's. While the majority of the learners was less than 30 years old (77 percent), there were 39 individuals who were 61 years of age or older.

The largest percentage of the learners was Caucasian (50.5 percent), and Blacks comprised the second largest group (31.3 percent). Eight percent of the learners were Hispanic, 4.5 percent were Asian Indo-Chinese, and 2.5 percent were Native American. No information was available for 27 individuals (1.9 percent).

Most of the learners reported that they were single (46.6 percent), and 29.7 reported that they were married. The remaining 20 percent reported that they were either divorced, separated, or widowed. Seventy percent of the learners reported that they had at least one child.

New students were also asked if they were receiving some type of public assistance. While there was no information available for 8 percent of the students, 41 percent reported that they were receiving some type of public assistance. Most learners also indicated that they did not need help with transportation in order to attend TLC (87.2 percent), and a similar number (87.3 percent) indicated that they did not need help with child care.

Forty percent of the learners reported that they had been told in earlier educational settings that they had some type of a learning problem. Only 11 percent of the students seeking admission at TLC indicated that English was their second language.

New students were also asked "What will keep you coming to TLC?" The largest proportion (66 percent) reported that individual achievement would keep them active in TLC programs. Other responses frequently given were personal motivation (10 percent) and personal satisfaction (9.6 percent).

Employment Information

Most of the learners enrolled at TLC indicated that they were not currently looking for new or different employment (67 percent). Less than 5 percent of the learners reported that they had been laid off from their previous employment position, and more than half (55.4 percent) reported that they did not work outside of their homes.

Educational History and Achievement Information

Although 88 percent of new students indicated that they had completed at least the 9th grade, 61 percent of the students tested out at an overall grade level equivalent to or less than 4th grade on TABE tests. The proportion of students testing out at a grade level equivalent between 4th and 7th grade was 19 percent, and the remaining 20 percent tested out at grade levels equivalent to or greater than the 8th grade. More specifically, 65 percent of the students taking the TABE test had reading abilities at or below the 7th grade level, and 76 percent had math abilities at or below the 7th grade level.

Most of the learners seeking enrollment at TLC indicated that they were from the state of Minnesota (61.3 percent). Approximately half of the learners (49 percent) reported that they had made previous attempts to improve their reading and math skills.

Initial Goals Upon Admission to TLC

Students reported a variety of reasons for entering TLC. However, 72 percent of the students entering programs at TLC indicated that improving their math skills was a primary goal, and 70 percent indicated that improving their reading skills was a primary goal. In addition, 48 percent reported a primary goal to be the improvement of their writing skills, and 42 percent indicated that achieving a General Educational Development (GED) certificate was a primary goal. Thirty-four percent indicated that they had primary goals in some "other area," and only 76 individuals (5.4 percent) indicated that they were seeking admission to TLC in order to improve English as their second language.

Information Related to the TLC Context

Because the learning programs at TLC have combined computer technology with ABE instruction, administrators were interested in identifying students' previous experiences and attitudes regarding computers. While less than half (41 percent)

reported that they had previously "played on a computer," 81 percent reported positive responses about working on computers at TLC. Over the two-year period, only 8 percent of students entering programs at TLC reported negative responses about working on computers.

Program of Enrollment and Activity

Learners were enrolled in four basic categories of programs at TLC. Students were most often enrolled and active in reading programs (63 percent) and math programs (58 percent), both of which involved CAI. In addition, 36 percent of students were enrolled in "other" programs of some type; 25 percent were enrolled in a Laubach program.

Overall, 43 percent of the students quit coming to TLC before having logged 12 contact hours. An additional 27 percent who had logged more than 12 contact hours at TLC dropped out of programs before having completed any of their learning goals. However, as of September, 1987, 19 percent of the students were still active in programs and an additional 11 percent had completed their learning objectives and left TLC.

The reasons for dropping out of programs at TLC were unknown for 28 percent of the dropouts. When the reasons for dropping out were known, family and/or living-related reasons were cited the most frequently (14.3 percent). Other reasons given included personal reasons (7.5 percent), program-related reasons (5.2 percent), and employment reasons (4.5 percent).

Independent Variables

The 36 independent and/or blocking variables employed in this study were students' personal and demographic characteristics, initial reasons/goals for coming to TLC, educational history and achievement, information related to past and current employment, and attitudes and feelings about working with computers. These

measures were used to indicate the degree of equivalence between the characteristics of dropouts and persisters, and to reveal the degree of association between the characteristic and the dependent variable (attrition/persistence) when correlated.

More specifically, the blocking variables were organized and classified into the six categories listed below. How the variable was measured is identified in parentheses after the variable.

Personal and Demographic Information

- Has the learner been told that he/she has a learning problem, and/or whether they have been in a special class (no/yes)
- Whether the learner speaks English as a second language (no/yes)
- Whether the learner needs help with transportation (no/yes)
- Sex of the learner (male/female)
- Age of the learner (age in years)
- Marital status of the learner (single/married/separated-divorced/ widowed)
- Whether the learner has children or not (no/yes)
- Whether the learner receives some type of public assistance or not (no/yes)
- Ethnic background of the learner (Native American/Black/ Caucasian/Hispanic/Asian Indochinese/Other)
- Whether the learner needs help with day care (no/yes)
- What does the learner think/feel it is that will keep him/her coming back to TLC (individual achievement/personal satisfaction/ motivation/the computers/convenient time/don't know/other)

Employment Information

- Does the learner work outside of the home (no/yes)
- Is the learner looking for work (no/yes)
- Is the learner currently laid-off from his/her work (no/yes)

Educational History and Achievement Information

- Last grade completed in high school (last grade in school completed)
- State the individual attended high school in (non-Minnesota/ Minnesota)
- Whether the learner has done anything to try to improve his/her reading/math skills since attending high school (no/yes)
- Reading grade level equivalent of the learner from TABE (grade equivalent in year of school)
- Math grade level equivalent of the learner from TABE (grade equivalent in year of school)
- Overall grade level equivalent of the learner from TABE (grade equivalent in year of school)
- Overall grade level equivalent of the learner from WRAT (grade equivalent in year of school)

Intitial Goals of the Learner at Admission to TLC

- To get a GED (no/yes)
- To earn a diploma (no/yes)
- To improve math skills (no/yes)
- To improve writing skills (no/yes)
- To improve reading skills (no/yes)
- To improve English as a second language (no/yes)
- To improve in other areas (no/yes)

Information Related to Computer-Assisted Instruction (CAI)

- Whether the learner has ever played on a computer before coming to TLC (no/yes)
- How the learner feels about working on a computer (negative/ neutral/positive)

Program of Initial Entry and Activity in the Programs

- Working in Laubach program (no/yes)
- Working in reading program (no/yes)
- Working in math program (no/yes)
- Working in other program (no/yes)
- Reasons given for dropping out (employment reasons/personal reasons/family-living reasons/program reasons/pending/still active or completions/unknown)
- Completions (advanced to other program/passed GED/completed all goals/completed at least one goal)

Dependent Variable

The dependent variable in this study was attrition/persistence. As explained earlier, the purpose of this study was to determine the degree of equivalence between the characteristics of dropouts and persisters.

The definitions of attrition and persistence used for the purposes of this study are listed below:

Attrition:

1. Non-participants: Individuals who have logged less than 12 contact[16] hours at TLC.

2. Dropouts: Individuals who have logged more than 12 contact hours at TLC, but then dropped out for whatever

[16] The 12 contact hours figure was used to separate non-participants from dropouts because of its consistency with the reporting guidelines required by the Minnesota Department of Education, Adult Basic Education.

reasons before having completed any of their personal objectives.

Persistence:

1. Those Still Active: Individuals who were still active in a learning program at TLC. (This category includes individuals who may have already completed one learning module, but have moved on to a second or third one as well.)

2. Completions: Individuals who have (1) advanced to another program, (2) passed a GED examination, (3) completed all of their learning goals specified upon admission to TLC, or (4) completed at least 1 of their learning goals specified upon admission to TLC.

Method of Analysis

The basic methodology used in this study was discriminant function, a statistical procedure used to relate variations in a set of predictor variables in the variation of a dichotomous dependent variable. Attrition/persistence served as the dichotomous dependent variable. The predictor variables were both the 36 independent variables and the six categories of independent variables. More specifically, discriminant function was used to determine the relationship of the independent variables and their ability to predict student attrition and/or persistence.

This study was designed to answer the following question: What is the degree of equivalence between the characteristics of dropouts and persisters? Two related questions, (1) What is the degree of equivalence between the characteristics of non-participants and dropouts? (within the attrition category), and (2) What is the degree of equivalence between the characteristics of students who are still active and those who have completed their goals? (within the persistence category), were also investigated.

To answer the first question, three separate analyses were conducted. First, each of the six categories of independent variables was examined. Within each category, a discriminant function using a step-wise procedure was performed to

reveal the degree of association between each independent variable and attrition/persistence. If there was a non-significant relationship ($p > .05$) between an independent variable and the dependent variable, the independent variable was eliminated from the full model and future analyses. If there was a significant relationship ($p < .05$) between an independent variable and the dependent variable, the independent variable was included in the second analysis.

A second discriminant function using a step-wise procedure was then performed to reveal the predominant association between the remaining independent variables with attrition/persistence. For the qualitative variables, a chi-square analysis was used to determine whether differences between students' marital status, ethnic background, age, and personal motivation were statistically significant.

To answer the first related question, three separate analyses were again conducted. First, within each of the six categories, a discriminant function using a step-wise procedure was performed to reveal the degree of association between each independent variable and non-participants/dropouts. If there was a non-significant relationship ($p > .05$) between an independent variable and non-participants/dropouts, the independent variable was eliminated from the full model and future analyses. If there was a significant relationship ($p < .05$) between an independent variable and non-participants/dropouts, the independent variable was included in the second analysis.

A second discriminant function using a step-wise procedure was then performed to reveal the predominant association between the remaining independent variables with non-participants/dropouts. For the qualitative variables, a second chi-square analysis was used to determine whether differences between students' marital status, ethnic background, age, personal motivation, and reasons for separation were statistically significant.

To answer the second related question, the three separate analyses were repeated again. First, within each of the six categories, a discriminant function using

a step-wise procedure was performed to reveal the degree of association between each independent variable and those still active/completions. If there was a non-significant relationship ($p > .05$) between an independent variable and those still active/completions, the independent variable was eliminated from the full model and future analyses. If there was a significant relationship ($p < .05$) between an independent variable and those still active/completions, the independent variable was included in the second analysis.

A second discriminant function using a step-wise procedure was then performed to reveal the predominant association between the remaining independent variables with those still active/completions. Once again for the qualitative variables, a final chi-square analysis was used to determine whether differences between students' marital status, ethnic background, age, and personal motivation were statistically significant.

For the discriminant functions, only cases with missing values pairwise were deleted from the computations. In other words, cases with complete data on the pair of variables being correlated were used to compute the correlation cofficients used for the discriminant function analyses. The pairwise deletion method of handling missing data was chosen in order to utilize as much of the data base as possible.

Limitations of the Study

The limitations of this study are related to the nature and size of the sample, the duplicity of the definition used for the dependent variable, the ambiguity of completion standards in the different learning programs, and aspects of the measurement instruments used.

The subjects of this study were selected from individuals who permitted TLC to use their personal information for research purposes. While only 120 individuals did not allow TLC to use their personal information, we do not know the impact that these cases might have had on the results of the study had they been included.

For this reason the group of students investigated in this study may not be representative of the larger population of TLC students.

The nature of the definitions used for attrition/persistence in this study may also pose a potential threat to its certainty. The nature of the dropout and persister categories used to answer the primary research question is qualitative. However, a 12 contact hour standard was used to separate non-participants from dropouts within the attrition category. As a result, the dependent variable has combined both qualitative and quantitative qualities.

A similar problem existed with the completion standards used to monitor progress and completion in the different learning programs. For example, it was relatively easy to determine that a student had completed a goal of obtaining a GED when the examinations had been successfully passed. However, monitoring the progress and completion of students enrolled in Laubach programs was more difficult. The time and effort required to move between units at or below the 4th grade are often more demanding and time consuming than for those working at higher grade levels. In addition, the units of mastery in the Laubach program are not as clearly evident as they are when one has successfully passed GED examinations. While students enrolled in lower level reading programs may appear to be progressing more slowly and completing less, they may have actually worked harder and longer at their learning objectives than their counterparts who have obtained a GED and left the program.

The majority of the questions on the Intake Questionnaire could be coded in a straightforward manner. For example, when responding to the question which asked a student to identify "gender," there was a minimum potential for error in the intake counselor's interpretation of the answer given. However, the nature of some of the items called for the intake counselor to draw qualitative inferences about a student's answer. For instance, when asked "What will keep you coming to TLC?" many of the students responded with "myself." Because it would have been

impossible to code every response given by every student, the response "myself" was coded as "individual achievement."

CHAPTER IV
Results

This chapter reports the results of the analysis of the data collected and described in the previous chapter. The chapter is divided into three sections. The first section describes the results of the analyses conducted to answer the primary question of the study: What is the degree of equivalence between the characteristics of dropouts and persisters? The second and third sections of the chapter present the results of the analyses performed to answer the two related questions of the study: (1) Within the attrition group, what is the degree of equivalence between the characteristics of non-participants and dropouts?, and (2) Within the persistence group, what is the degree of equivalence between the characteristics of students who are still active and those who have completed their goals? The chapter concludes with a summary of the results described.

Results of the Primary Question

The first question posed by this study is:

> What is the degree of equivalence between the characteristics of dropouts and persisters?

The first procedure for analyzing the equivalence between the characteristics of dropouts and persisters was to examine the six categories of independent variables. A discriminant function using a step-wise procedure was performed to test the significance between an independent variable and attrition/persistence by entering the variables within each of the six categories. The findings reported in Table 4.1 indicate that 17 variables within the categories of educational history and achievement, employment situation, and initial goals of the learner were found to be significant. However, all 36 of the independent variables accounted for only 7.8 percent of the variance in attrition/persistence.

Table 4.2 contains a cumulative total of the amount of variance accounted for in attrition/persistence within each of the six categories of independent variables. As is evident from the table, personal and demographic information variables, CAI-related variables, and students' program of activity variables accounted for less than one percent of the variance in attrition/persistence. The three categories of educational history and achievement, employment information, and initial goals accounted for 7 percent of the variation in attrition/persistence.

Table 4.2 - Discriminant Function Summary of Categories Predicting Attrition/Persistence

Mult R	Rsq	F Ratio	Sig F	Category of Variables
.063	.004	.624	.7581	Personal and Demographic
.212	.045	9.394	.0001*	Educational History/Achievement
.101	.010	4.553	.0035*	Employment Information
.122	.015	3.016	.0038*	Initial Goals
.021	.000	.213	.8877	CAI-Related Variables
.065	.004	1.511	.1964	Program of Activity

Table 4.1 - Initial Discriminant Function Within Categories Attrition/Persistence

Personal and Demographic Information

Step	Mult R	Rsq	F Ratio	Sig F	Correl	Variable
1	.0372	.0014	1.758	.185	.0372	Age of the learner
2	.0449	.0020	1.281	.278	-.0272	Need help with transportation
3	.0510	.0026	1.101	.348	-.0217	Is learner ESL
4	.0545	.0030	.941	.439	-.0137	Whether learner has children
5	.0578	.0033	.849	.515	.0008	Learner on public assistance
6	.0600	.0036	.762	.600	.0138	Gender of Learner
7	.0617	.0038	.689	.681	-.0212	Need help with child care
8	.0628	.0039	.624	.758	.0119	Whether told learning problem

Educational History and Achievement Information

Step	Mult R	Rsq	F Ratio	Sig F	Correl	Variable
1	.1532	.0235	33.781	.001*	.1532	Reading grade equivalent
2	.1799	.0324	23.490	.001*	-.0781	Last grade completed
3	.1941	.0377	18.314	.001*	.0709	Previous effort to improve
4	.2041	.0417	15.240	.001*	.1352	Math grade equivalent
5	.2095	.0439	12.860	.001*	.0020	Overall WRAT grade equivalent
6	.2107	.0444	10.843	.001*	.1469	Overall TABE grade equivalent
7	.2119	.0449	9.394	.001*	-.0167	State attended high school

Employment Information

Step	Mult R	Rsq	F Ratio	Sig F	Correl	Variable
1	.0819	.0067	8.949	.003*	-.0819	Looking for work
2	.0955	.0091	6.100	.002*	-.0516	Currently laid off
3	.1011	.0102	4.553	.004*	-.0060	Work outside of home

Initial Goals of the Learner

Step	Mult R	Rsq	F Ratio	Sig F	Correl	Variable
1	.0802	.0064	9.103	.003*	.0802	Goal in other areas
2	.0977	.0096	6.772	.001*	-.0442	Goal to improve math
3	.1067	.0114	5.389	.001*	-.0394	Goal to improve English
4	.1148	.0132	4.682	.001*	.0462	Goal to achieve GED
5	.1198	.0144	4.079	.001*	-.0320	Goal to earn diploma
6	.1216	.0148	3.500	.002*	.0196	Goal to improve reading
7	.1219	.0149	3.017	.004*	.0032	Goal to improve writing

CAI Related Variables

Step	Mult R	Rsq	F Ratio	Sig F	Correl	Variable
1	.0153	.0002	.313	.576	.0153	Ever played on computer
2	.0218	.0005	.319	.727	-.0142	How feel about computers

Program of Learning Activity

Step	Mult R	Rsq	F Ratio	Sig F	Correl	Variable
1	.0469	.0022	3.102	.078	.0469	In other program
2	.0580	.0034	2.368	.094	-.0263	In math program
3	.0627	.0039	1.848	.137	-.0161	In reading program
4	.0655	.0043	1.511	.196	-.0022	In Laubach program

If the relationship between an independent variable and the dependent variable was non-significant ($p > .05$) in the first analysis, the independent variable was eliminated from future analyses. A second discriminant function using a step-wise procedure was then performed to reveal the predominant association between the remaining 17 independent variables with attrition/persistence. The cumulative variances reported in Table 4.3 reveal that 9 of the 17 independent variables alone accounted for slightly over 6 percent (out of 7.8 percent) of the variation in attrition/persistence.

Table 4.3 - Discriminant Function Summary of Predominant Associations in Predicting Attrition/Persistence

Step	Mult R	Rsq	F Ratio	Sig F	Correl	Variable
1	.1532	.0235	31.882	.001*	.1532	Reading grade equivalent
2	.1799	.0324	22.168	.001*	-.0781	Last grade completed
3	.1957	.0383	17.572	.001*	-.0819	Currently looking for work
4	.2082	.0433	14.982	.001*	.0709	Have done something to improve
5	.2182	.0476	13.217	.001*	.0802	Primary goal in Other area
6	.2294	.0526	12.226	.001*	.1352	Math grade equivalent
7	.2369	.0561	11.215	.001*	-.0394	Primary goal to improve English
8	.2423	.0587	10.287	.001*	-.0442	Primary goal to improve math
9	.2467	.0608	9.487	.001*	-.0516	Currently laid off from work
10	.2489	.0620	8.698	.001*	.0020	WRAT grade level equivalent
11	.2507	.0629	8.026	.001*	.0462	Primary goal to achieve GED
12	.2525	.0638	7.463	.001*	-.0320	Grimary goal to earn diploma
13	.2533	.0642	6.932	.001*	.1469	Overall TABE grade level
14	.2539	.0645	6.465	.001*	.0196	Primary goal to improve reading
15	.2544	.0647	6.052	.001*	-.0060	Works outside of home
16	.2548	.0649	5.687	.001*	.0032	Primary goal to improve writing
17	.2550	.0650	5.359	.001*	-.0167	State in which you attend high school

The chi-square analysis reported in Table 4.4 yielded no statistically significant differences between attrition and persistence when comparing marital status and ethnic background. However, there were statistically significant differences between the two groups regarding age and "what will keep you coming to TLC." Persisters reported almost twice as often that personal satisfaction would keep them coming to TLC. Dropouts tended to somewhat younger than persisters.

Table 4.4 - Chi-Square Analysis for Attrition/Persistence

Variable	Attrition N	Attrition %	Persistence N	Persistence %	X^2	Sig
Marital Status					5.637	.1306
Single	464	50.8	192	48.7		
Married	278	30.4	111	28.2		
Divorced/Separated	162	17.7	81	20.6		
Widowed	10	1.1	10	2.5		
Ethnic Background					7.023	.2189
Native American	25	2.6	10	2.4		
Black	319	33.0	121	29.2		
Caucasian	478	49.5	233	56.3		
Hispanic	82	8.5	31	7.5		
Asian Indo-Chinese	50	5.2	13	3.1		
Other	12	1.2	6	1.4		
Age					11.267	.0463*
Less than 20 Years	459	46.6	192	45.6		
21 to 30 Years Old	317	32.2	113	26.8		
31 to 40 Years Old	118	12.0	74	17.6		
41 to 50 Years Old	51	5.2	19	4.5		
51 to 60 Years Old	15	1.5	10	2.4		
61 Years and Older	26	2.6	13	3.1		
What Will Keep You Coming					14.761	.0277*
Individual Achieve	662	70.9	272	67.0		
Personal Satisfaction	75	8.0	60	14.8		
Personal Motivation	103	11.0	38	9.4		
The Computers	13	1.4	4	1.0		
Other	81	8.7	32	7.8		

These results indicate that personal and demographic information, the program of learning activity, and the CAI-related variables had little or no impact towards the prediction of student attrition/persistence. On the other hand, students' educational history and achievement, employment situation, and initial goals at entry did account for some prediction of student attrition/persistence.

The zero-order correlations from Table 4.3 for the independent variables also provide us with some additional insights. Overall, persisters tended to have higher reading and math grade equivalents, less schooling, and worked previously to improve their reading and math skills. They were also more likely to have had goals in Other programs and less likely to have had goals to improve their English and

math skills. In general, persisters were not currently looking for work or laid-off from employment either.

The individuals in the attrition group typically had lower reading and math grade equivalents, but often had completed more grades in school than persisters. In contrast to persisters, the primary goals of the attrition group were more likely to be in the areas of English and math, and they usually had not made any previous efforts to improve these skills. Individuals in the attrition group were more likely to be looking for work and currently laid off from their previous jobs.

Results of the First Related Question

The first related question posed by this study is:

> Within the attrition group, what is the degree of equivalence between the characteristics of non-participants and dropouts?

The first procedure for analyzing the equivalence between the characteristics of non-participants and dropouts was to examine the six categories of independent variables. A discriminant function using a step-wise procedure was performed to test the significance between an independent variable and non-participants/dropouts by entering the variables within each of the six categories. The findings reported in Table 4.5 indicate that 22 variables within all of the categories except CAI-related variables were found to be significant. However, all 36 independent variables accounted for only 5.9 percent of the variance in non-participants/dropouts.

Table 4.6 contains a cumulative total of the amount of variance accounted for in non-participants/dropouts within each of the six categories of independent variables. Educational history and achievement variables, initial goals of learners, and program of activity variables accounted for 4.4 percent of the variance in non-participants/dropouts.

Table 4.5 - Initial Discriminant Function Within Categories
Non-Participants/Dropouts

Personal and Demographic Information

Step	Mult R	Rsq	F Ratio	Sig F	Correl	Variable
1	.0784	.0061	7.840	.005*	.0784	Is learner ESL
2	.0818	.0067	4.271	.014*	-.0278	Learner on public assistance
3	.0846	.0072	3.046	.028*	.0197	Whether learner has children
4	.0865	.0075	2.389	.049*	-.0240	Gender of learner
5	.0875	.0077	1.952	.083	-.0008	Whether told learning problem
6	.0884	.0078	1.660	.127	.0078	Need help with transportation
7	.0890	.0079	1.441	.185	.0009	Age of the learner
8	.0893	.0080	.1269	.256	.0021	Need help with child care

Educational History and Achievement Information

Step	Mult R	Rsq	F Ratio	Sig F	Correl	Variable
1	.0484	.0023	3.305	.069	-.0484	Overall WRAT grade equivalent
2	.0707	.0050	3.527	.030*	.0425	Last grade completed
3	.0886	.0079	3.702	.011*	-.0338	State attended high school
4	.0941	.0089	3.131	.014*	-.0423	Overall TABE grade equivalent
5	.0988	.0098	2.760	.017*	-.0113	Math grade equivalent
6	.1029	.0106	2.499	.021*	-.0226	Previous effort to improve
7	.1030	.0106	2.143	.037*	-.0328	Reading grade equivalent

Employment Information

Step	Mult R	Rsq	F Ratio	Sig F	Correl	Variable
1	.0568	.0032	4.297	.038*	.0568	Looking for work
2	.0616	.0038	2.524	.080	.0254	Currently laid off
3	.0654	.0043	1.893	.129	.0040	Work outside of home

Initial Goals of the Learner

Step	Mult R	Rsq	F Ratio	Sig F	Correl	Variable
1	.0896	.0080	11.373	.001*	.0896	Goal to improve English
2	.1133	.0128	9.130	.001*	-.0665	Goal in other areas
3	.1206	.0145	6.902	.001*	-.0427	Goal to achieve GED
4	.1252	.0157	5.585	.001*	.0339	Goal to earn diploma
5	.1288	.0166	4.727	.001*	.0197	Goal to improve math
6	.1291	.0167	3.957	.001*	.0068	Goal to improve writing
7	.1292	.0167	3.391	.001*	.0055	Goal to improve reading

CAI Related Variables

Step	Mult R	Rsq	F Ratio	Sig F	Correl	Variable
1	.0391	.0015	2.051	.152	-.0391	Ever played on a computer
2	.0499	.0025	1.665	.190	.0274	How feel about computers

Program of Learning Activity

Step	Mult R	Rsq	F Ratio	Sig F	Correl	Variable
1	.1182	.0140	19.893	.001*	-.1182	In other program
2	.1283	.0165	11.749	.001*	-.0757	In Laubach program
3	.1301	.0169	8.055	.001*	-.0379	In math program
4	.1304	.0170	6.067	.001*	.0022	In reading program

Table 4.6 - Discriminant Function Summary of Categories Predicting Non-Participants/Dropouts

Mult R	Rsq	F Ratio	Sig F	Category of Variables
.08943	.00798	1.2610	.2556	Personal and Demographic
.10300	.01061	2.1429	.0367*	Educational History/Achievement
.06356	.00427	1.8933	.1288	Employment Information
.12916	.01668	3.3906	.0014*	Initial Goals
.04991	.00249	1.1122	.3430	CAI-Related Variables
.13044	.01702	6.0672	.0001*	Program of Activity

If the relationship between an independent variable and the dependent variable was non-significant ($p > .05$) in the first analysis, the independent variable was eliminated from future analyses. A second discriminant function using a step-wise procedure was then performed to reveal the predominant association between the remaining 22 independent variables with non-participation/dropping out. Table 4.7 reveals that 9 of the 22 independent variables alone accounted for slightly over 4 percent (out of 5 percent) of the variation in non-participation/dropping out.

Table 4.7 - Discriminant Function Summary of Predominant Associations in Predicting Non-Participants/Dropouts

Step	Mult R	Rsq	F Ratio	Sig F	Correl	Variable
1	.1182	.0140	17.316	.001*	-.1182	In other program
2	.1455	.0212	13.214	.001*	.0896	Goal to improve English
3	.1577	.0249	10.375	.001*	.0568	Looking for work
4	.1655	.0274	8.587	.001*	.0425	Last grade completed
5	.1731	.0299	7.527	.001*	-.0423	Overall TABE grade equivalent
6	.1801	.0324	6.802	.001*	-.0757	In Laubach program
7	.1893	.0358	6.464	.001*	-.0484	Overall WRAT grade equivalent
8	.1951	.0381	6.017	.001*	-.0665	Goal in other areas
9	.1999	.0400	5.622	.001*	.0784	Is learner ESL
10	.2024	.0410	5.188	.001*	.0339	Primary goal to earn diploma
11	.2049	.0420	4.834	.001*	-.0427	Primary goal to achieve GED
12	.2068	.0428	4.512	.001*	-.0226	Have done something to improve
13	.2087	.0435	4.241	.001*	-.0338	State which you attended High School
14	.2103	.0442	4.001	.001*	-.0278	Learner is on public assistance
15	.2119	.0449	3.788	.001*	.0197	Primary goal to improve math
16	.2127	.0453	3.579	.001*	.0068	Prmiary goal to improve writing
17	.2136	.0456	3.393	.001*	.0055	Primary goal to improve reading
18	.2139	.0458	3.214	.001*	.0197	Learner has children
19	.2141	.0458	3.048	.001*	.0022	Active in reading program
20	.2142	.0459	2.894	.001*	-.0379	Active in math program
21	.2142	.0459	2.754	.001*	-.0328	TABE reading grade equivalent
22	.2142	.0459	2.626	.001*	-.0113	TABE math grade equivalent

The chi-square analysis reported in Table 4.8 yielded no statistically significant differences between non-participation and dropping out when comparing age and "what will keep you coming to TLC." However, there was a statistically significant difference between the two groups regarding marital status, ethnic background, and students' reasons for being inactive. More specifically, more of the non-participants were single (53.4 percent) as compared to dropouts (46.6 percent) and more of the dropouts tended to be married (36.1 percent) as compared to non-participants (26.9 percent).

Overall, the percentages of Caucasians, Native Americans, and Hispanics in the non-participant and dropout groups were balanced. However, Blacks were more likely to drop out of programs with less than 12 contact hours (35.4 percent were non-participants; 29 percent were dropouts) and Asian Indo-Chinese were more likely to drop out after completing more than 12 contact hours (3.2 percent were non-participants; 8.5 percent were dropouts).

There were also significant differences between non-participants and dropouts when comparing their reasons for being inactive. Non-participants tended to become inactive for family/living-related reasons and unknown reasons than did dropouts. On the other hand, dropouts tended to report more program-related reasons and personal reasons than did non-participants.

Although variables in five our of the six categories of independent variables tested significant, these results indicate that personal and demographic information variables, employment situation, and CAI-related variables had little impact towards predicting non-participation/dropping out. On the other hand, students' educational history and achievement, their initial goals at entry, and program of activity did account for some prediction of student non-participation/dropping out.

The zero-order correlations listed in Table 4.7 provide additional insight into the relationship between each independent variable and non-participants and dropouts. In general, non-participants tended to have higher TABE and WRAT

Table 4.8 - Chi-Square Analysis for Non-Participants/Dropouts

Variable	Non-Participants (< 12 hours) N	%	Dropouts (12 hours or more) N	%	X^2	Sig
Marital Status					8.811	.0319*
Single	300	53.4	164	46.6		
Married	151	26.9	127	36.1		
Divorced/Separated	104	18.5	58	16.5		
Widowed	7	1.2	3	0.9		
Ethnic Background					16.477	.0056*
Native American	17	2.8	8	2.2		
Black	213	35.4	106	29.0		
Caucasian	296	49.3	182	49.9		
Hispanic	50	8.3	32	8.8		
Asian Indo-Chinese	19	3.2	31	8.5		
Other	6	1.0	6	1.6		
Age					8.332	.1389
Less than 20 Years	303	49.7	156	41.5		
21 to 30 Years Old	188	30.8	129	34.3		
31 to 40 Years Old	70	11.5	48	12.8		
41 to 50 Years Old	25	4.1	26	6.9		
51 to 60 Years Old	9	1.5	6	1.6		
61 Years and Older	15	2.5	11	2.9		
What Will Keep You Coming					5.602	.2309
Individual Achieve	399	68.8	263	74.3		
Personal Satisfaction	49	8.4	26	7.3		
Personal Motivation	70	12.1	33	9.3		
The Computers	11	1.9	2	0.6		
Other	51	8.8	30	8.5		
Reasons for Being Inactive					16.172	.0129*
Employment Reasons	34	5.6	30	8.0		
Personal Reasons	61	10.0	45	12.0		
Family/Liv Reasons	135	22.1	66	17.6		
Program Reasons	40	6.6	33	8.8		
Pending	74	12.1	67	17.8		
Prior Completions	6	1.0	5	1.3		
Unknown	260	42.6	130	34.6		

grade level equivalent scores and had usually completed fewer grades in school than dropouts. Non-participants were more likely than dropouts to have goals in Other areas and to be active in Laubach and Other programs. However, they were less likely to be ESL learners than dropouts and were usually not currently looking for new employment.

Conversely, dropouts were more likely to be looking for work than non-participants and they tended to be ESL students although they usually were not active in Laubach programs. Dropouts typically had lower TABE and WRAT grade equivalents even though they had generally completed more years of school than non-participants. Dropouts were more likely than non-participants to be looking for new employment and their primary goals were usually to improve their English only.

Results of the Second Related Question

The second related question posed by this study is:

> Within the persistence group, what is the degree of equivalence between the characteristics of students who are still active and those who have completed their goals?

The first procedure for analyzing the equivalence between the characteristics of those still active and completions was to examine the six categories of independent variables. A discriminant function using a step-wise procedure was performed to test the significance between each independent variable and those still active/completions by entering the variables within each of the six categories. The findings reported in Table 4.9 indicate that 20 variables within the categories of educational history and achievement, employment situation, initial goals of learners, and program of activity were found to be significant. All 36 independent variables accounted for 10.4 percent of the variance in those still active/completions.

Table 4.10 contains a cumulative total of the amount of variance accounted for in those still active/completions within each of the six categories of independent variables. Educational history and achievement variables, employment situation variables, and program of activity variables accounted for 8.9 percent of the variance in those still active/completions. Personal and demographic information, initial goals of the learner at entry, and CAI-related variables accounted for less than 1 percent of the variance between those still active and completions.

Table 4.9 - Initial Discriminant Function Within Categories Those Still Active/Completions

Personal and Demographic Information

Step	Mult R	Rsq	F Ratio	Sig F	Correl	Variable
1	.0412	.0017	2.161	.142	.0412	Gender of learner
2	.0546	.0030	1.898	.150	-.0376	Is learner ESL
3	.0648	.0042	1.782	.149	.0310	Age of the learner
4	.0684	.0047	1.490	.203	-.0202	Need help with transportation
5	.0716	.0051	1.304	.260	-.0239	Whether told learning problem
6	.0742	.0055	1.167	.321	-.0074	Whether learner has children
7	.0765	.0059	1.063	.385	.0180	Learner on public assistance
8	.0785	.0062	.979	.450	-.0158	Need help with child care

Educational History and Achievement Information

Step	Mult R	Rsq	F Ratio	Sig F	Correl	Variable
1	.2129	.0453	66.682	.001*	.2129	Reading grade equivalent
2	.2348	.0551	40.956	.001*	.2013	Math grade equivalent
3	.2458	.0604	30.081	.001*	-.0444	Last grade completed
4	.2491	.0621	23.193	.001*	.0376	Previous effort to improve
5	.2518	.0634	18.968	.001*	.2104	Overall TABE grade equivalent
6	.2540	.0645	16.092	.001*	.0085	State attended high school
7	.2550	.0650	13.898	.001*	.0559	Overall WRAT grade equivalent

Employment Information

Step	Mult R	Rsq	F Ratio	Sig F	Correl	Variable
1	.0867	.0075	10.050	.002*	-.0867	Looking for work
2	.1026	.0105	7.406	.001*	-.0573	Currently laid off
3	.1166	.0136	6.081	.001*	-.0257	Work outside of home

Initial Goals of the Learner

Step	Mult R	Rsq	F Ratio	Sig F	Correl	Variable
1	.0658	.0043	6.115	.014*	.0658	Goal to achieve GED
2	.0781	.0061	4.303	.014*	-.0418	Goal to improve English
3	.0857	.0073	3.458	.016*	-.0370	Goal to improve math
4	.0945	.0089	3.157	.014*	.0347	Goal in other areas
5	.0973	.0095	2.680	.020*	-.0203	Goal to earn diploma
6	.0981	.0096	2.267	.035*	-.0134	Goal to improve writing
7	.0981	.0096	1.943	.060	-.0135	Goal to improve reading

CAI Related Variables

Step	Mult R	Rsq	F Ratio	Sig F	Correl	Variable
1	.0246	.0006	.813	.367	.0246	Ever played on computer
2	.0295	.0009	.580	.560	-.0139	How feel about computers

Program of Learning Activity

Step	Mult R	Rsq	F Ratio	Sig F	Correl	Variable
1	.0823	.0068	9.581	.002*	-.0823	In Laubach program
2	.0931	.0087	6.142	.002*	.0236	In Other program
3	.1003	.0101	4.752	.003*	-.0186	In reading program
4	.1005	.0101	3.574	.007*	.0031	In math program

Table 4.10 - Discriminant Function Summary of Categories Predicting Those Still Active/Completions

Mult R	Rsq	F Ratio	Sig F	Category of Variables
.07855	.00617	.97933	.4504	Personal and Demographic
.25499	.06502	13.89779	.0001*	Educational History/Achievement
.11658	.01359	6.08103	.0004*	Employment Information
.09813	.00963	1.94315	.0596	Intial Goals
.03095	.00096	.42709	.7336	CAI-Related Variables
.10046	.01009	3.57267	.0066*	Program of Activity

If the relationship between an independent variable and the dependent variable was non-significant ($p > .05$) in the first analysis, the independent variable was eliminated from future analyses. A second discriminant function using a step-wise procedure was then performed to reveal the predominant association between the remaining 20 independent variables with those still active/completions. Table 4.11 reveals that 8 of the 20 independent variables alone accounted for almost 8 percent of the variance in those still active/completions.

Table 4.11 - Discriminant Function Summary of Predominant Associations in Predicting Those Still Active/Completions

Step	Mult R	Rsq	F Ratio	Sig F	Correl	Variable
1	.2129	.0453	62.933	.001*	.2129	Reading grade equivalent
2	.2348	.0551	38.651	.001*	.2013	Math grade equivalent
3	.2498	.0624	29.370	.001*	-.0867	Looking for work
4	.2596	.0674	23.904	.001*	-.0444	Last grade completed
5	.2661	.0708	20.151	.001*	-.0418	Goal to improve English
6	.2710	.0734	17.449	.001*	-.0573	Currently laid off
7	.2755	.0759	15.487	.001*	.0658	Goal to achieve GED
8	.2792	.0779	13.938	.001*	-.0186	In reading program
9	.2824	.0798	12.695	.001*	.0376	Have done something to improve
10	.2843	.0808	11.584	.001*	-.0370	Primary goal to improve math
11	.2866	.0822	10.710	.001*	.0347	Primary goal to improve in Other areas
12	.2881	.0830	9.921	.001*	.2104	Overall TABE grade equivalent
13	.2895	.0838	9.243	.001*	-.0257	Work outside of home
14	.2906	.0845	8.651	.001*	.0236	Active in Other learning program
15	.2913	.0849	8.112	.001*	.0085	State in which you attended high school
16	.2920	.0853	7.640	.001*	-.0823	Active in Laubach program
17	.2930	.0859	7.237	.001*	.0559	Overall WRAT grade equivalent
18	.2937	.0863	6.865	.001*	-.0203	Primary goal to earn diploma
19	.2941	.0865	6.517	.001*	-.0134	Primary goal to improve writing
20	.2942	.0866	6.194	.001*	.0031	Active in math program

The chi-square reported in Table 4.12 yielded no statistically significant difference between those still active and completions when comparing marital status. It was not possible to calculate a X^2 for the ethnic background, age, and "what will keep you coming to TLC" variables because both variables contained more than one cell with expected frequencies less than five. However, those still active tended to Black and Hispanic while Caucasians were more likely to have completed their goals. Those still active were nearly three times as likely as completions to report that personal satisfaction would keep them coming to TLC. Completions tended to report more often than those still active that individual achievement would keep them coming to TLC.

Table 4.12 - Chi-Square Analysis for Those Still Active/Completions

Variable	Those Still Active N	%	Completions N	%	X^2	Sig
Marital Status					6.930	.0741
Single	111	44.0	81	57.0		
Married	80	31.7	31	21.8		
Divorced/Separated	55	21.8	26	18.3		
Widowed	6	2.4	4	2.8		
Ethnic Background					***	
Native American	5	1.9	5	3.3		
Black	87	33.0	34	22.7		
Caucasian	135	51.1	98	65.3		
Hispanic	22	8.3	9	6.0		
Asian Indo-Chinese	10	3.8	3	2.0		
Other	5	1.9	1	0.7		
Age					***	
Less than 20 Years	118	44.0	74	48.4		
21 to 30 Years Old	70	26.1	43	28.1		
31 to 40 Years Old	55	20.5	19	12.4		
41 to 50 Years Old	12	4.5	7	4.6		
51 to 60 Years Old	8	3.0	2	1.3		
61 Years and Older	5	1.9	8	5.2		
What Will Keep You Coming					***	
Individual Achieve	169	64.8	103	71.0		
Personal Satisfaction	50	19.2	10	6.9		
Personal Motivation	24	9.2	14	9.7		
The Computers	2	0.8	2	1.4		
Other	16	6.1	16	11.0		

*** Variable contains more than 1 cell with expected frequencies less than 5

These results indicate that personal and demographic information, initial goals at entry, and CAI-related variables had little impact towards the prediction of those still active and completions. On the other hand, educational history and achievement, employment situation, and the program of activity did account for some prediction of students who were still active and completions.

Overall, completions had higher reading and math grade equivalents even though they had completed fewer grades in school than those still active in programs. While completions had not been laid off from work, they usually were not looking for work either. Completions typically had initial goals of achieving a GED.

On the other hand, those still active had overall lower reading and math grade equivalents even though they have completed more grades in school. Those still active commonly had goals to improve their English and were active in reading programs; they were usually not pursuing GED's. Those still active were currently laid off from their previous employment and were actively looking for new employment.

A overall profile of the individuals in the attrition/persistence groups has been compiled in Table 4.13. In addition, a breakdown of the sub-groups has also been provided. An interesting finding illustrated in the table is that there were a number of similarities between non-participants and completions and likewise between dropouts and those still active. For example, both non-participants and completions had completed fewer grades in school, but had higher TABE grade level equivalents. In addition, both groups also tended to be single and not currently looking for work. On the other hand, dropouts and those still active tended to be married and currently looking for work. In addition, they had lower TABE grade level equivalents even though they had completed more grades in school.

Table 4.14 displays a summary of how the independent variables tested for significance across the initial discriminant functions of the study. Two categories of independent variables, educational history/achievement and initial goals of the

Table 4.13 - A Profile of the Individuals in the Levels of Attrition and Persistence

Attrition:	Persistence:
had lower reading grade equivalents had completed more grades in school were currently looking for work have not made previous efforts to improve did not have primary goals in Other areas had lower math grade equivalents had primary goals to improve English had primary goals to improve math were currently laid off from work	had higher reading grade equivalents had completed less grades in school were not currently looking for work have made previous efforts to improve did have primary goals in Other areas had higher math grade equivalents did not have primary goals to improve English did not have primary goals to improve math were not currently laid off from work

Non-Participants:	Dropouts:	Those Still Active:	Completions:
(Individuals who have logged less than 12 contact hours at TLC)	(Individuals who have logged more than 12 contact hours at TLC, but dropped out before having completed any goals)	(Individuals who were still active in a learning program at TLC)	(Individuals who have advanced to another program, passed a GED, completed all their goals, or at least one of their initial learning goals)
were active in Other programs did not have goals to improve Eng'ish were not currently looking for work had completed less grades in school had higher TABE grade equivalents were active in Laubach programs had higher WRAT grade equivalents did have primary goals in Other areas were not ESL learners	were not active in Other programs had goals to improve English were currently looking for work had completed more grades in school had lower TABE grade equivalents were not active in Laubach programs had lower WRAT grade equivalents did not have primary goals in Other areas were ESL learners	had lower reading grade equivalents had lower math grade equivalents were currently looking for work had completed more grades in school did have goals to improve English were currently laid off from work did not have goals to achieve GED were active in reading programs	had higher reading grade equivalents had higher math grade equivalents were not currently looking for work had completed less grades in school did not have goals to improve English were not currently laid off from work did have goals to achieve GED were not active in reading programs
more likely to be single more likely to dropout for unknown, family/living related reasons	more likely to be married more likely to dropout for program and employment related reasons	more likely to be married more likely to come for reasons of personal satisfaction	more likely to be single more likely to come for reasons of personal achievement

learner, were statistically significant across the initial discriminant functions for all three analyses. Employment variables and program of activity were significant in two of the analyses and personal/demographic variables were significant in only one of the initial discriminant functions. Somewhat surprising, the CAI-related variables were not statistically significant in any of the analyses of the study. The summary in Table 4.15 reveals the relative degree of association among the ten independent variables which correlated the highest in each of the three secondary discriminant functions.

Table 4.15 - Comparison of the Step at Which the Independent Variables Were Entered Across the Secondary Discriminant Functions

Step Entered Attrition/Persist	Step Entered N-Part/Dropout	Step Entered Active/Complete	Variable
1	-	1	Reading grade level equivalent
2	4	4	Last grade completed in school
3	3	3	Currently looking for work
4	-	9	Have done something to improve
5	8	-	Primary goal in Other areas
6	-	2	Math grade equivalent
7	2	5	Primary goal to improve English
8	-	10	Primary goal to improve in math
9	-	6	Currently laid-off from work
-	1	-	Active In Other program
-	5	-	Overall TABE grade level equivalent
-	6	-	Active in Laubach program
10	7	-	Overall WRAT grade level equivalent
-	9	-	Is learner ESL
-	-	7	Primary goal to achieve GED
-	-	8	Active in reading program
-	10	-	Primary goal to earn diploma

Chapter Summary

This chapter presented the results of the analyses conducted to examine the questions posed by this study. The analyses did not support the conclusion that there were substantial differences between persisters and dropouts when comparing their personal and demographic information, educational history and achievement information, employment situations, initial goals at entry, CAI-related variables, and program of learning activity.

Table 4.14 - Summary of How Independent Variables Tested for Significance Across the Initial Discriminant Functions

Personal and Demographic Information

Attrition/Persist	N-Part/Dropout	Active/Complete	Variable
-	-	-	Age of the learner
-	-	-	Need help with transportation
-	*	-	Is learner ESL
-	*	-	Whether learner has children
-	*	-	Learner on public assistance
-	*	-	Gender of Learner
-	-	-	Need help with child care
-	-	-	Whether told learning problem

Educational History and Achievement Information

Attrition/Persist	N-Part/Dropout	Active/Complete	Variable
*	-	*	Reading grade equivalent
*	*	*	Last grade completed
*	*	*	Previous effort to improve
*	*	*	Math grade equivalent
*	-	*	Overall WRAT grade equivalent
*	*	*	Overall TABE grade equivalent
-	*	*	State attended high school

Employment Information

Attrition/Persist	N-Part/Dropout	Active/Complete	Variable
*	*	*	Looking for work
*	-	*	Currently laid off
*	-	*	Work outside of home

Initial Goals of the Learner

Attrition/Persist	N-Part/Dropout	Active/Complete	Variable
*	*	*	Goal in other areas
*	*	*	Goal to improve math
*	*	*	Goal to improve English
*	*	*	Goal to achieve GED
*	*	*	Goal to earn diploma
*	*	-	Goal to improve reading
*	*	*	Goal to improve writing

CAI Related Variables

Attrition/Persist	N-Part/Dropout	Active/Complete	Variable
-	-	-	Ever played on computer
-	-	-	How feel about computers

Program of Learning Activity

Attrition/Persist	N-Part/Dropout	Active/Complete	Variable
-	*	*	In other program
-	*	*	In math program
-	*	*	In reading program
-	*	*	In Laubach program

The analyses conducted to answer the first and second related questions also yielded results that did not support the notion that there were substantial differences between non-participants and dropouts within the attrition group and between those still active and completions within the persister group when comparing their personal and demographic information, educational history and achievement information, employment situations, initial goals at entry, CAI-related variables, and program of learning activity. The next chapter will attempt to explain the implications of these findings.

CHAPTER V
Conclusions

This chapter will summarize the study conducted and present the results found. A discussion of these findings will follow. Finally, concluding remarks will be offered.

Summary

The purposes of this study were (1) to determine the degree of equivalence between the characteristics of dropouts and persisters and (2) to reveal the degree of equivalence of non-participants/dropouts and of those still active/completions. In this study, comparisons were made between students' personal and demographic information, their progress and/or completion of learning objectives, their reasons

for leaving the program, and their attitudes and feelings about working with computers.

Records obtained from the Technology for Literacy Center (TLC) were used to compile a list of 1527 individuals who had completed intake interviews at TLC since the project began. As a part of the regular intake procedures, new students are specifically asked whether the personal information they have provided TLC can be used for research purposes provided their name or identifying information is not given out. Only 120 individuals answered "no" to this question; thus the final size of our sample was 1407 individuals.

The 36 independent variables employed in this study were students' personal and demographic characteristics, initial reasons/goals for coming to TLC, educational history and achievement, information related to past and current employment, and attitudes and feelings about working with computers. The independent variables were used to indicate the degree of equivalence between the characteristics of dropouts and persisters, and to reveal the degree of association between the characteristic and the dependent variable (attrition/persistence) when correlated.

The basic methodology used in this study was discriminant function, a statistical procedure used to relate variations in a set of predictor variables in the variation of a dichotomous dependent variable. Attrition/persistence served as the criterion or dichotomous dependent variable. The predictor variables were the 36 independent variables and the six categories of blocking variables. More specifically, discriminant function was used to determine the relationship of the independent variables and their ability to predict student attrition and/or persistence.

This study was designed to answer the following question: What is the degree of equivalence between the characteristics of dropouts and persisters? Two related questions, (1) What is the degree of equivalence between the characteristics of non-participants and dropouts? (within the attrition category), and (2) What is the degree

of equivalence between the characteristics of students who are still active and those who have completed their goals? (within the persistence category), were also investigated.

To answer the first question, three separate analyses were conducted. First, the individual variables within each of the six categories of independent variables were examined. Within each category, a discriminant function using a step-wise procedure was performed to reveal the degree of association between each independent variable and attrition/persistence. If there was a non-significant relationship ($p > .05$) between an independent variable and the dependent variable, the independent variable was eliminated from the full model and future analyses. If there was a significant relationship ($p < .05$) between an independent variable and the dependent variable, the independent variable was included in the second analysis.

A second discriminant function using a step-wise procedure was then performed to reveal the predominant association between the remaining independent variables with attrition/persistence. In addition, a chi-square analysis was used with the qualitative data to determine whether differences between students' marital status, ethnic background, and personal motivation, and reasons for separation were statistically significant.

To answer the two related questions, the three separate analyses were again conducted but with different dependent variables (i.e., non-participants/dropouts and those still active/completions).

For the discriminant functions, only cases with complete data on the pair of variables being correlated were used to compute the correlation coefficients used for the discriminant function analyses. The pairwise deletion method of handling missing data was chosen in order to utilize as much of the data base as possible.

Attrition vs. Persistence. For the primary question, the results indicate that the 17 statistically significant independent variables accounted for 7 percent of the

variance in attrition/persistence (all 36 independent variables accounted for 7.8 percent of the variance in attrition/persistence). Nine variables pertaining to students' educational history and achievement, employment situation, and initial goals at entry accounted for 6 percent of the variance in student attrition and persistence.

Overall, persisters had higher reading and math grade equivalents at entry, less schooling, and they had worked previously to improve their reading and math skills. They also had goals in Other programs but were less likely to have had goals to improve their English and math skills. Persisters generally were currently not laid-off from employment and were not currently looking for work.

The individuals in the attrition group had the reverse profile: they had lower reading and math grade equivalents at the time of program entry, but had completed more grades in school than persisters. In contrast to persisters, the primary goals of the attrition group were more likely to be in the areas of English and math, and they usually had not made any previous efforts to improve these skills. Individuals in the attrition group were more likely to be looking for work and currently laid off from their previous jobs than persisters.

Non-Participants vs. Dropouts. The results indicate that the 22 statistically independent variables accounted for less than 5 percent of the variance in non-participants/dropouts. Nine variables pertaining to students' educational history and achievement, employment situation, and initial goals at entry accounted for 4 percent of the variance in non-participants/dropouts.

In general, non-participants had higher TABE[17] and WRAT[18] grade level equivalent scores at the time of program entry and had completed fewer grades in school than dropouts. Non-participants were more likely than dropouts to have goals in Other areas and to be active in Laubach and Other programs. However, they

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[17] Test of Adult Basic Education.

[18] Wide Range Achievement Test.

were less likely to be ESL learners than dropouts and were usually not currently looking for new employment.

Conversely, dropouts were more likely to be looking for work than non-participants and they tended to be ESL students with the primary goal of improving their English. Dropouts typically had lower TABE and WRAT grade equivalents even though they had generally completed more years of school than non-participants. They were not in Laubach tutorial programs.

Those Still Active vs. Completions. The results for the second related question indicate that educational history and achievement, employment situation, and the program of activity accounted for approximately 9 percent of the variance in those still active and completions.

Overall, completions had higher reading and math grade equivalents at program entry even though they had completed fewer grades in school than those still active in programs. While completions had not been laid off from work, they usually were not looking for work either. Completions typically had initial goals of achieving a General Educational Development (GED) certification.

On the other hand, those still active had overall lower reading and math grade equivalents even though they have completed more grades in school. Those still active commonly had goals to improve their English and were active in reading programs; they were usually not pursuing GED's. Those still active were currently laid off from their previous employment and were actively looking for new employment.

Discussion

The results of the analyses support the conclusion that a combination of 36 variables pertaining to personal and demographic information, educational history and achievement, employment situation, initial goals at entry, computer instruction, and program of activity lack power at predicting attrition and persistence in adult

basic literacy programs. A total of 17 statistically significant variables was unable to account for more than 6.5 percent of the variance. However, a profile of the individuals who persisted and those who did not could be created from information provided by the students.

The low correlations found between the independent variables and the dependent variable were perhaps the most surprising aspect of this study, especially when considering the size of the sample. Even with 9 independent variables included in the discriminant model, only 7 percent of the variance in attrition and persistence was accounted for. An explanation for the lack of correlation may be due to the variance associated with such a heterogeneous group; correlations that could otherwise be present might have been masked.

A second aspect of this study concerns the tendency for completions (the most persistent/successful of the sub-groups) and non-participants (the least persistent and/or successful of the sub-groups) to be the most alike of the four sub-groups. A similar but different pattern was often observed between dropouts and those still active. For example, both non-participants and completions had higher TABE and WRAT grade level equivalents, had completed fewer grades in school, did not have goals to improve English, were usually single, and were not looking for work. They did differ in that non-participants were most likely to be active in Laubach programs with goals in Other areas, whereas completions had goals to achieve a GED. Also, Blacks were more likely to be non-participants while Caucasians were more likely to be completions.

Similarly, dropouts and those still active had lower TABE and WRAT grade level equivalents, had completed more grades in school, had goals to improve their English, were usually married, and were currently looking for work. They did differ in that those still active were often laid off from work and active in reading programs, whereas dropouts tended to be ESL learners.

Some of the results from this study were consistent with the findings of others (Cramer, 1982; Cain and Whalen, 1979) that the reasons for attrition in ABE literacy programs frequently and largely remain "unknown." TLC utilized a follow-up process to contact learners who had missed a scheduled appointment, or had been absent for more than 30 days, and/or to find out why they were no longer coming. Despite this rigorous follow-up process, the reasons for why learners had dropped out were unknown 40 percent of the time.

In a previous study, the non-school related reason most often given for ABE attrition was a job related conflict between work and class hours (Cramer, 1982). However, the results from this study indicate that employment related reasons (6.6 percent) were cited the least (refer to Table 4.8, page 64). Other reasons for dropping out included program related reasons (7.5 percent), personal reasons (10.87 percent), and family/living related reasons (20.6 percent).

This study also examined the relationship between attrition/persistence and a number of demographic variables. The directionalities of these relationships was not always consistent with the findings of other investigators. For example, previous studies (Cramer, 1982; Garry, 1975; Sainty, 1971; and Diekhoff and Diekhoff, 1984) found significant positive correlations between persistence and age. Londoner (1972) went so far as to describe the relationship between age and marital status with persistence as "pivotal linkages."

This study found that the likelihood of individuals less than 20 years old dropping out (46.6 percent) and/or persisting (45.6 percent) was equal. Individuals between the ages of 21 to 30 years old were somewhat more likely to dropout (32.2 percent) than to persist (26.8 percent), while individuals 31 to 40 years of age were somewhat more likely to persist (17.6 percent) than to dropout (12.0 percent). However, the trend reversed again with individuals between the ages of 41 to 50 years of age.

A chi-square analysis (refer to Table 4.4, page 59) did yield a statistically significant difference (p = .04) between the age of individuals who persisted and those who did not. When examining differences in marital status, a chi-square analysis (refer to Table 4.4, page 59) yielded no statistically significant difference (p = .13) between attrition and persistence. While another chi-square analysis (refer to Table 4.8, page 64) found the difference between non-participants and dropouts to be significant when comparing marital status (p = .03), the difference between those still active and completions (refer to Table 4.12, page 68) was not statistically significant (p = .07). While some of the chi-square analyses between age and marital status with the subgroups were found to be significant, the results of this study would not support the hypothesis that age and marital status are "pivotal linkages" in predicting attrition and/or persistence.

A third demographic variable, ethnic background, was also examined in this study. Other studies have found that white students are more likely to persist while minority students are more likely to dropout (Darkenwald, 1975). In one study, Richardson and Nyer (1974) observed that Blacks showed higher attrition rates than other ethnic groups. Diekhoff and Diekhoff (1984) concluded that Hispanics were more likely to dropout than to persist adding that they may have higher attrition rates than other racial groups because many have learned English as a second language.

The results of this study are not consistent with any of the previous findings. A chi-square analysis (refer to Table 4.4, page 59) comparing ethnic background between attrition and persistence yielded no statistically significant difference (p = .21) between the two groups and race. However, a second chi-square analysis (refer to Table 4.8, page 64) comparing ethnic background between non-participants and dropouts did yield a statistically significant difference (p = .01) between those two groups and race. While Native Americans, Caucasians, and Hispanics remained evenly balanced, 35.4 percent of the non-participants were Black and the figure for

dropouts was 29.0 percent. The percentage of Asian-Indo Chinese who had stayed active in programs at least 12 contact hours was over twice (8.5 percent) that of non-participants (3.2 percent).

A third chi-square analysis (refer to Table 4.12, page 68) comparing ethnic background between those still active and completions revealed that 33 percent of those still active in programs were Blacks while the figure for Blacks who had completed their goals was 22.7 percent. On the other hand, 65.3 percent of the completions were Caucasian while 51.1 percent of those still active.

As discussed earlier, one of the most commonly stated reasons for leaving ABE literacy programs is obtaining a job or finding a better job (Comptroller General of the United States, 1975; Cramer, 1982). In previous studies, investigators have found that employment status was related to attrition and persistence. For example, Diekhoff and Diekhoff (1984) found that students who described themselves as unemployed but available for work were much more likely to dropout than were other students. The results of this study were similar. Persisters were typically not laid off or currently looking for new employment while dropouts were usually laid off and currently looking for new employment.

Another finding of this study is consistent with the results of others (Londoner, 1972; Kelley, 1974; Taylor, Wade, Jackson, Blum, and Goold, 1981; Diekhoff and Diekhoff, 1984) in that obtaining a GED is positively correlated with persistence. Persisters were more likely to have goals to achieve a GED, while those still active were more likely to have goals to improve in English or in math.

Two sets of variables related to the body of research on student and program congruence. A major theme of this research has been that there needs to be a match between the characteristics of students and the ABE programs which they are enrolled in if attrition and non-participation are going to be reduced. Because the learning programs at TLC have combined computer technology with ABE instruction, administrators were interested in identifying students' previous

experiences and attitudes regarding computers. While less than half (41 percent) reported that they had previously "played on a computer," 81 percent reported positive responses about working on computers at TLC. Only 8 percent of students entering programs at TLC reported negative responses about working on computers.

Prior to the discriminant analyses, it was anticipated that students' feelings about working with computers and previous positive experiences with computers would correlate positively with persistence in the TLC context. However, none of the computer-related variables was found to account for a statistically significant amount of the variance accounted for in attrition/persistence or in any of the subcategories. Also related to this finding was that only 7.5 percent of the reasons given by students for dropping out of TLC were program related reasons. While some of the unknown reasons are likely to be for program related reasons, this finding may suggest that program related variables do not account for as much of the variance in student attrition and persistence as do personal circumstances and goals. These findings may also suggest that TLC has done an excellent job in meeting and matching the needs of its student population. Yet another interpretation of these findings may simply be what Boshier (1973) concluded in that institutional variables only "mediate the congruence/dropout relationship," and that no one variable can account for a substantial portion of dropout variance.

Concluding Remarks

The results of this study have a number of implications for educators in the field of adult basic education literacy programs. First, the population at TLC was very diverse, so diverse, in fact that the standard deviation for a variable was often greater than its mean. Our statistics and theory will tell us that if a population is too diverse, it will be difficult to determine any relationships between the variables involved. While it is logical for educators to want to classify students and/or learners into categories for manageability purposes, it seems that, as educators, we

may have become a bit too preoccupied with labeling new students at the point of entry into programs.

Second, at the time when TLC first implemented its computer aided instructional (CAI) approach to learning, it was a novel and innovative approach for adult basic education. Some educators predicted that CAI would generate fear and increase the anxiety levels of adults coming to TLC. However, this study found that only 8 percent of students entering programs at TLC over a two-year period reported any negative reactions about working on computers. When evaluating the learning outcomes obtained by the students and their initial reactions toward working with computers, the use of computers has broadened the capacity of ABE literacy programs to serve larger numbers of students in a more individualized manner than before.

Third, the previous studies of attrition/persistence which have found sets of variables to predict attrition/persistence have been based on small sample sizes--some as small as 66 students. This study explored a large number of variables across a substantial number of cases and combined three out of the four approaches which have been previously used to study attrition and persistence. Overall, this study found that a total of 17 statistically significant variables was unable to account for any more than 6.5 percent of the variance in attrition/persistence. If there was any new information and/or hidden variable to be discovered regarding attrition/persistence, the size and combined scope of this study should have discovered them.

Frequently, the students involved in ABE literacy programs have had negative experiences with learning in the past and have extremely low self-concepts. While this population of adult learners often fears humiliation and failure, they also fear being perceived as dumb or slow. Some are even trying to function in learning situations with unidentified learning disabilities. While many of the learners currently active in ABE literacy programs have made previous efforts to improve

their basic education skills and left because of family and/or personal reasons, many return again and again as they continue to work towards their goals. Students often have to scrape up extra bus money and contend with child care every time they come to a tutorial session; it can be a major accomplishment for them to have "shown up" at all.

In addition to the direct outcomes reported by ABE literacy programs, students often report that their lives have been affected in other ways as well. Students often talk of a renewed sense of self-confidence in their increased ability to live on their own and how they had almost given up hope of ever being able to do many of the things they had originally wanted out of life. But while these types of outcomes are often not found or included in many of the statistical reports generated each year, or in most definitions and/or criterion measures used to assess attrition/persistence, they represent substantial differences in the quality of the learners' lives. It is time to realize that the quantitatively-oriented criteria presently used to assess attrition and persistence at ABE education sites is unrealistic and at best, very limited in scope, particularily when ones considers the nature of the population being served.

The ABE population has often been described by policy-makers and politicians as the members of society who have "fallen through the cracks of the system." However, an ABE system preoccupied with predicting and labeling learners at a point of entry into programs seems crucially flawed. In addition, little is still known about the vast majority of adults in the target population which has never enrolled in ABE literacy programs. Perhaps the three biggest overall messages of this study are that (1) we cannot and should stop trying to typecast the students engaged in adult basic education learning situations, (2) that we need to broaden our perspectives of "success" in ABE literacy programs beyond just quantitative criteria, and (3) that we should begin to explore new ways in which to begin to attract and/or meet the needs of majority of the target population.

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Appendix A

Intake Questionnaire

GOALS:

1. Why did you come to TLC? _____

_____

(Use Learner's Exact Words)

2. Primary Goals:

___ Achieve GED ___ Improve Math Skills ___ Improve Reading Skills
___ Earn a Diploma ___ Improve Writing Skills ___ Improve English as a Second Language
___ Other _____

EDUCATION:

3. Last Grade Completed in K-12: _____

4. High School Attended: Name _____ City _____
State _____ Country _____

5. Post Secondary Education: ___ No ___ Yes ___ NA

If Yes: Name _____ City _____ State _____
What did you study? _____

6. What have you done to try to improve your reading/math skills since you left high school? (Example: Taken a reading/math class; worked with a tutor; bought a book; watched a special TV program) _____

_____

(Use Learner's Exact Words)

7. IF THE LEARNER WAS IN A CLASS OR IS IN A PROGRAM ASK:

a. Has another program sent you to TLC? ___ No ___ Yes ___ NA

*If Yes: What program? _____

b. Are you still going to classes there? ___ No ___ Yes ___ NA

If No: How long were you in this class/program? (Days) _____
or (Months) _____ or (Years) _____ or NA _____

Why did you leave this class/program? _____

_____

*If Yes: How long have you been in this class/program? (Days) _____
or (Months) _____ or (Years) _____ or NA _____

Name of Contact: _____

* This learner needs a referral form.

READING:

8. Please check things the learner is reading:

___ Newspaper ___ The Bible ___ Menus at Restaurants ___ Books
___ Magazines ___ Story Books to ___ Street signs ___ Labels on
___ Cook Books to children ___ Work Notices Boxes
___ Bills ___ Other _____

9. Are there any things you would like to read at TLC? ___ No ___ Yes ___ NA
If yes: What? _____

MATH:

10. Are there any things in math you would like to work on at TLC?
___ No ___ Yes ___ NA If yes: What? _____
_____

EMPLOYMENT:

11. Do you work outside the home? ___ No ___ Yes

What kind of work do you do? _____

Are you: ___ Looking for work ___ A Homemaker ___ Retired
___ On Lay Off ___ A Student
___ Other: _____

12. Is there a job you would like to have? ___ No ___ Yes
If yes: What? _____
(Use Learner's Exact Words)

SCREENING:

13. Do you have trouble with your eyes? ___ No ___ Yes
If yes: What are they? _____

14. Do you have trouble with your ears? ___ No ___ Yes
If yes: What are they? _____

15. Do you or have you been told that you have a learning problem or have you been in a special class? ___ No ___ Yes
Response: _____
(Use Learner's Exact Words)

16. ESL: Do you speak English as your second language? ___ No ___ Yes

If Yes: a. What language(s) do you speak? _____
b. What language(s) do you speak at home? _____
c. Can you read or write another language? ___ No ___ Yes
(Read) _____ (Write) _____

17. Does this learner need additional screening? ___ No ___ Yes

If yes: Please check appropriate category

___ ESL ___ Vision ___ Hearing ___ Mental Retardation
___ Mental Illness ___ Learning ___ Other: _____

TECHNOLOGY FOR LITERACY CENTER:

18. Have you ever played on a computer? ___ No ___ Yes

19. How do you feel about working on a computer? _____
_____

20. What will cause you to keep coming to TLC? _____
_____
(Use Learner's Exact Words)

21. Do you need help with? (Caution, at the present time TLC is not providing these services.) Please check the appropriate category:

___ Child Care ___ Helping you find a job ___ Information about HS/GED
___ Transportation ___ Career Planning ___ Information about college
___ Learning how to study ___ Information about vo-educ
___ Other: _____

DEMOGRAPHICS:

22. Gender: ___ Male ___ Female

23. Birthdate: _____
Month Day Year

24. Marital Status: ___ Single ___ Married ___ Divorced/Separated ___ Widow(er)

25. Ethnic Background: ___ American Indian ___ Hispanic
___ Black ___ Asian/Indo-Chinese
___ Caucasian ___ Other: _____

26. Children: Number _____ Ages _____

27. Public Assistance: ___ No ___ Yes
If yes: What agency? _____ Contact: _____

28. WRAT score: _____

Information Release Form

Learner's Name: _____ ID#: _____

I. If TLC helps you:

A. Would you be willing to tell your friends about it? ___ No ___ Yes

B. Would you be willing to talk to the press about it? ___ No ___ Yes

II. We want learners to help us make TLC better:

A. Would you be willing to serve on a TLC committee? ___ No ___ Yes

B. Do you have any special skills we can use at TLC? _____ ___ No ___ Yes
(Learner's Skills)

III. TLC is interested in helping people improve their reading and math skills. To do this we need information from you and other learners. If you help us, you will not be identified in any reports.

A. As long as we don't use your name, can we use the information you have given us? ___ No ___ Yes

IV. Sometimes agencies, such as WIN, Re-entry DVR, Social Security, Veterans Administration, and Job Core, request information from us. May we have your permission to send them the following information:

A. Your name, address, birthdate, attendance, test scores (achievement and similar test scores), and teachers' comments? ___ No ___ Yes

Comments: _____

_____

Learner's Signature: _____ Date: _____

* This request must be signed and witnessed in the presence of the St. Paul Public School Official (TLC instructors, counselors, or managers) authorized to release this information or witnessed by a Notary Public.

* Witness' Signature: _____

Appendix B

Frequency Distribution of Independent Variables

BREAKDOWN OF THE GROUPS

BREAKDOWN BETWEEN ATTRITION AND PERSISTENCE

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
PERSISTER GROUP	1	421	29.9	29.9	29.9
ATTRITION GROUP	2	986	70.1	70.1	100.0
	TOTAL	1407	100.0	100.0	

Mean	1.701	Mode	2.000	Std Dev	.458
Minimum	1.000	Maximum	2.000		
Valid Cases	1407	Missing Cases	0		

ALL FOUR SUBGROUPS

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
THOSE STILL ACTIVE	1	610	43.4	43.4	43.4
COMPLETONS WHO LEFT	2	376	26.7	26.7	70.1
NONPARTICIPANTS <12	3	268	19.0	19.0	89.1
DROPOUTS >12	4	153	10.9	10.9	100.0
	TOTAL	1407	100.0	100.0	

Mean	1.974	Mode	1.000	Std Dev	1.029
Minimum	1.000	Maximum	4.000		
Valid Cases	1407	Missing Cases	0		

PERSONAL AND DEMOGRAPHIC VARIABLES

GENDER OF THE LEARNER

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
MALE	1	710	50.5	50.5	50.5
FEMALE	2	697	49.5	49.5	100.0
	TOTAL	1407	100.0	100.0	

Mean	1.495	Mode	1.000	Std Dev	.500
Minimum	1.000	Maximum	2.000		
Valid Cases	1407	Missing Cases	0		

AGE OF THE LEARNER

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
<20 YEARS OLD	1	651	46.3	46.3	46.3
21 TO 30 YEARS OLD	2	430	30.6	30.6	76.8
31 TO 40 YEARS OLD	3	192	13.6	13.6	90.5
41 TO 50 YEARS OLD	4	70	5.0	5.0	95.5
51 TO 60 YEARS OLD	5	25	1.8	1.8	97.2
61 AND OLDER	6	39	2.8	2.8	100.0
	TOTAL	1407	100.0	100.0	

Mean	1.937	Mode	1.000	Std Dev	1.183
Minimum	1.000	Maximum	6.000		
Valid Cases	1407	Missing Cases	0		

MARITAL STATUS OF THE LEARNER

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
SINGLE	1	656	46.6	50.2	50.2
MARRIED	2	389	27.6	29.7	79.9
DIVORCED-SEPARATED	3	243	17.3	18.6	98.5
WIDOWED	4	20	1.4	1.5	100.0
	9	99	7.0	MISSING	
	TOTAL	1407	100.0	100.0	

Mean	1.715	Mode	1.000	Std Dev	.817
Minimum	1.000	Maximum	4.000		
Valid Cases	1308	Missing Cases	99		

ETHNIC BACKGROUND OF THE LEARNER

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
NATIVE AMERICAN	1	35	2.5	2.5	2.5
BLACK	2	440	31.3	31.9	34.4
CAUCASIAN	3	711	50.5	51.5	85.9
HISPANIC	4	113	8.0	8.2	94.1
ASIAN INDOCHINESE	5	63	4.5	4.6	98.7
OTHER	6	18	1.3	1.3	100.0
LEFT BLANK	9	27	1.9	MISSING	
	TOTAL	1407	100.0	100.0	

Mean	2.843	Mode	3.000	Std Dev	.882
Minimum	1.000	Maximum	6.000		
Valid Cases	1380	Missing Cases	27		

WHETHER THE LEARNER HAS CHILDREN OR NOT

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
NO CHILDREN	1	421	29.9	29.9	29.9
HAS CHILDREN	2	986	70.1	70.1	100.0
	TOTAL	1407	100.0	100.0	

Mean	1.701	Mode	2.000	Std Dev	.458
Minimum	1.000	Maximum	2.000		
Valid Cases	1407	Missing Cases	0		

IS THE LEARNER ON PUBLIC ASSISTANCE

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
NO	1	719	51.1	55.6	55.6
YES	2	575	40.9	44.4	100.0
LEFT BLANK	9	113	8.0	MISSING	
	TOTAL	1407	100.0	100.0	

Mean	1.444	Mode	1.000	Std Dev	.497
Minimum	1.000	Maximum	2.000		
Valid Cases	1294	Missing Cases	113		

DOES THE LEARNER NEED HELP WITH CHILD CARE

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
NO	1	1228	87.3	87.3	87.3
YES	2	179	12.7	12.7	100.0
	TOTAL	1407	100.0	100.0	

Mean	1.127	Mode	1.000	Std Dev	.333
Minimum	1.000	Maximum	2.000		
Valid Cases	1407	Missing Cases	0		

DOES THE LEARNER NEED HELP WITH TRANSPORTATION

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
NO	1	1227	87.2	87.2	87.2
YES	2	180	12.8	12.8	100.0
	TOTAL	1407	100.0	100.0	

Mean	1.128	Mode	1.000	Std Dev	.334
Minimum	1.000	Maximum	2.000		
Valid Cases	1407	Missing Cases	0		

HAS THE LEARNER BEEN TOLD THAT THEY HAVE A LEARNING PROBLEM

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
NO	1	829	58.9	60.1	60.1
YES	2	551	39.2	39.9	100.0
	TOTAL	1407	100.0	100.0	

Mean	1.399	Mode	1.000	Std Dev	.490
Minimum	1.000	Maximum	2.000		
Valid Cases	1380	Missing Cases	27		

IS ENGLISH THE LEARNER'S SECOND LANGUAGE

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
NO	1	1252	89.0	89.0	89.0
YES	2	155	11.0	11.0	100.0
	TOTAL	1407	100.0	100.0	

Mean	1.110	Mode	1.000	Std Dev	.313
Minimum	1.000	Maximum	2.000		
Valid Cases	1407	Missing Cases	0		

WHAT WILL KEEP THE LEARNER COMING TO TLC

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
INDIVIDUAL ACHIEVE	1	934	66.4	69.7	69.7
PERSONAL SATISFAC	2	135	9.6	10.1	79.8
MOTIVATION	3	141	10.0	10.5	90.3
THE COMPUTERS	4	17	1.2	1.3	91.6
NO COST	5	4	.3	.3	91.9
CONVENIENT TIME	6	12	.9	.9	92.8
DONT KNOW	7	15	1.1	1.1	93.9
OTHER	97	82	5.8	6.1	100.0
LEFT BLANK	99	67	4.8	MISSING	
	TOTAL	1407	100.0	100.0	

Mean	7.348	Mode	1.000	Std Dev	22.921
Minimum	1.000	Maximum	97.000		
Valid Cases	1340	Missing Cases	67		

EDUCATIONAL HISTORY AND ACHIEVEMENT VARIABLES

STATE IN WHICH YOU ATTENDED HIGH SCHOOL

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
MINNESOTA	1	544	38.7	38.7	38.7
NON-MINNESOTA	2	863	61.3	61.3	100.0
	TOTAL	1407	100.0	100.0	

Mean	1.613	Mode	2.000	Std Dev	.487
Minimum	1.000	Maximum	2.000		
Valid Cases	1407	Missing Cases	0		

LAST GRADE COMPLETED IN K-12

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
K THRU 4TH GRADE	1	31	2.2	2.2	2.2
5TH THRU 8TH GRADE	2	143	10.2	10.2	12.4
9TH GRADE AND UP	3	1233	87.6	87.6	100.0
	TOTAL	1407	100.0	100.0	

Mean	2.854	Mode	3.000	Std Dev	.411
Minimum	1.000	Maximum	3.000		
Valid Cases	1407	Missing Cases	0		

WHAT THE LEARNER HAS DONE TO IMPROVE HIS/HER READING AND MATH

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
HAS DONE SOMETHING	1	718	51.0	51.0	51.0
HAS DONE NOTHING	2	689	49.0	49.0	100.0
	TOTAL	1407	100.0	100.0	

Mean	1.490	Mode	1.000	Std Dev	.500
Minimum	1.000	Maximum	2.000		
Valid Cases	1407	Missing Cases	0		

LEARNERS OVERALL TABE GRADE LEVEL EQUIVALENT

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
<=4TH GRADE EQUIV	1.00	859	61.1	61.1	61.1
4 TO 7 GRADE EQUIV	2.00	272	19.3	19.3	80.4
>=8 GRADE EQUIV	3.00	276	19.6	19.6	100.0
	TOTAL	1407	100.0	100.0	

Mean	1.586	Mode	1.000	Std Dev	.797
Minimum	1.000	Maximum	3.000		
Valid Cases	1407	Missing Cases	0		

LEARNERS OVERALL WRAT GRADE LEVEL EQUIVALENT

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
GRADE 1 EQUIV	1	101	7.2	7.2	7.2
GRADE 2 EQUIV	2	148	10.5	10.5	17.7
GRADE 3 EQUIV	3	122	8.7	8.7	26.4
GRADE 4 EQUIV	4	124	8.8	8.8	35.2
GRADE 5 EQUIV	5	139	9.9	9.9	45.1
GRADE 6 EQUIV	6	88	6.3	6.3	51.3
GRADE 7 EQUIV	7	143	10.2	10.2	61.5
GRADE 8 EQUIV	8	165	11.7	11.7	73.2
GRADE 9 EQUIV	9	377	26.8	26.8	100.0
	TOTAL	1407	100.0	100.0	

Mean	5.825	Mode	9.000	Std Dev	2.769
Minimum	1.000	Maximum	9.000		
Valid Cases	1407	Missing Cases	0		

LEARNERS TABE READING GRADE EQUIVALENT

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
<=4TH GRADE EQUIV	1.00	641	45.6	45.6	45.6
4 TO 7 GRADE EQUIV	2.00	278	19.8	19.8	65.3
>=8 GRADE EQUIV	3.00	488	34.7	34.7	100.0
	TOTAL	1407	100.0	100.0	

Mean	1.891	Mode	1.000	Std Dev	.889
Minimum	1.000	Maximum	3.000		
Valid Cases	1407	Missing Cases	0		

LEARNERS TABE MATH GRADE EQUIVALENT

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
<=4TH GRADE EQUIV	1.00	647	46.0	46.0	46.0
4 TO 7 GRADE EQUIV	2.00	416	29.6	29.6	75.6
>=8 GRADE EQUIV	3.00	344	24.4	24.4	100.0
	TOTAL	1407	100.0	100.0	

Mean	1.785	Mode	1.000	Std Dev	.811
Minimum	1.000	Maximum	3.000		
Valid Cases	1407	Missing Cases	0		

EMPLOYMENT VARIABLES

DOES THE LEARNER WORK OUTSIDE OF THE HOME

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
NO	1	779	55.4	55.4	55.4
YES	2	628	44.6	44.6	100.0
	TOTAL	1407	100.0	100.0	

Mean	1.446	Mode	1.000	Std Dev	.497
Minimum	1.000	Maximum	2.000		
Valid Cases	1407	Missing Cases	0		

IS THE LEARNER CURRENTLY LOOKING FOR WORK

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
NO	1	941	66.9	70.9	70.9
YES	2	387	27.5	29.1	100.0
LEFT BLANK	9	79	5.6	MISSING	
	TOTAL	1407	100.0	100.0	

Mean	1.291	Mode	1.000	Std Dev	.455
Minimum	1.000	Maximum	2.000		
Valid Cases	1328	Missing Cases	79		

IS THE LEARNER CURRENTLY LAYED OFF FROM WORK

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
NO	1	1259	89.5	94.8	94.8
YES	2	69	4.9	5.2	100.0
LEFT BLANK	9	79	5.6	MISSING	
	TOTAL	1407	100.0	100.0	

Mean	1.052	Mode	1.000	Std Dev	.222
Minimum	1.000	Maximum	2.000		
Valid Cases	1328	Missing Cases	79		

INITIAL GOALS OF THE LEARNER VARIABLES

PRIMARY GOAL TO ACHIEVE GED

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
NO	1	821	58.4	58.4	58.4
YES	2	586	41.6	41.6	100.0
	TOTAL	1407	100.0	100.0	

Mean	1.416	Mode	1.000	Std Dev	.493
Minimum	1.000	Maximum	2.000		
Valid Cases	1407	Missing Cases	0		

PRIMARY GOAL TO EARN DIPLOMA

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
NO	1	1381	98.2	98.2	98.2
YES	2	26	1.8	1.8	100.0
	TOTAL	1407	100.0	100.0	

Mean	1.018	Mode	1.000	Std Dev	.135
Minimum	1.000	Maximum	2.000		
Valid Cases	1407	Missing Cases	0		

PRIMARY GOAL TO IMPROVE MATH SKILLS

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
NO	1	395	28.1	28.1	28.1
YES	2	1012	71.9	71.9	100.0
	TOTAL	1407	100.0	100.0	

Mean	1.719	Mode	2.000	Std Dev	.450
Minimum	1.000	Maximum	2.000		
Valid Cases	1407	Missing Cases	0		

PRIMARY GOAL TO IMRPOVE WRITING SKILLS

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
NO	1	732	52.0	52.0	52.0
YES	2	675	48.0	48.0	100.0
	TOTAL	1407	100.0	100.0	

Mean	1.480	Mode	1.000	Std Dev	.500
Minimum	1.000	Maximum	2.000		
Valid Cases	1407	Missing Cases	0		

PRIMARY GOAL TO IMPROVE READING SKILLS

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
NO	1	417	29.6	29.6	29.6
YES	2	990	70.4	70.4	100.0
	TOTAL	1407	100.0	100.0	

Mean	1.704	Mode	2.000	Std Dev	.457
Minimum	1.000	Maximum	2.000		
Valid Cases	1407	Missing Cases	0		

PRIMARY GOAL TO IMPROVE ENGLISH AS ESL

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
NO	1	1331	94.6	94.6	94.6
YES	2	76	5.4	5.4	100.0
	TOTAL	1407	100.0	100.0	

Mean	1.054	Mode	1.000	Std Dev	.226
Minimum	1.000	Maximum	2.000		
Valid Cases	1407	Missing Cases	0		

PRIMARY GOAL IN OTHER AREAS

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
NO	1	921	65.5	65.5	65.5
YES	2	486	34.5	34.5	100.0
	TOTAL	1407	100.0	100.0	

Mean	1.345	Mode	1.000	Std Dev	.476
Minimum	1.000	Maximum	2.000		
Valid Cases	1407	Missing Cases	0		

COMPUTER-RELATED VARIABLES

HAS THE LEARNER EVER PLAYED ON A COMPUTER

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
NO	1	825	58.6	58.6	58.6
YES	2	582	41.4	41.4	100.0
	TOTAL	1407	100.0	100.0	

Mean	1.414	Mode	1.000	Std Dev	.493
Minimum	1.000	Maximum	2.000		
Valid Cases	1407	Missing Cases	0		

HOW DOES THE LEARNER FEEL ABOUT WORKING ON A COMPUTER

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
NEGATIVE	1	107	7.6	7.6	7.6
NEUTRAL	2	159	11.3	11.3	18.9
POSITIVE	3	1141	81.1	81.1	100.0
	TOTAL	1407	100.0	100.0	

Mean	2.735	Mode	3.000	Std Dev	.589
Minimum	1.000	Maximum	3.000		
Valid Cases	1407	Missing Cases	0		

PROGRAM OF INITIAL ENTRY AND ACTIVITY

LEARNER IN LAUBACH LEARNING PROGRAM

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
NO	1	1054	74.9	74.9	74.9
YES	2	353	25.1	25.1	100.0
	TOTAL	1407	100.0	100.0	

Mean	1.251	Mode	1.000	Std Dev	.434
Minimum	1.000	Maximum	2.000		
Valid Cases	1407	Missing Cases	0		

LEARNER IN READING LEARNING PROGRAM

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
NO	1	528	37.5	37.5	37.5
YES	2	879	62.5	62.5	100.0
	TOTAL	1407	100.0	100.0	

Mean	1.625	Mode	2.000	Std Dev	.484
Minimum	1.000	Maximum	2.000		
Valid Cases	1407	Missing Cases	0		

LEARNER IN MATH LEARNING PROGRAM

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
NO	1	587	41.7	41.7	41.7
YES	2	820	58.3	58.3	100.0
	TOTAL	1407	100.0	100.0	

Mean	1.583	Mode	2.000	Std Dev	.493
Minimum	1.000	Maximum	2.000		
Valid Cases	1407	Missing Cases	0		

LEARNER IN OTHER LEARNING PROGRAM

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
NO	1	904	64.3	64.3	64.3
YES	2	503	35.7	35.7	100.0
	TOTAL	1407	100.0	100.0	

Mean	1.357	Mode	1.000	Std Dev	.479
Minimum	1.000	Maximum	2.000		
Valid Cases	1407	Missing Cases	0		

LEARNERS' REASONS FOR LEARNER NO LONGER BEING ACTIVE IN TLC

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
EMPLOYMENT REASONS	1	64	4.5	4.5	4.5
PERSONAL REASONS	2	106	7.5	7.5	12.1
FAMLY-LIVNG REASONS	3	201	14.3	14.3	26.4
PROGRAM REASONS	4	73	5.2	5.2	31.6
PENDING	5	141	10.0	10.0	41.6
ACTIVE-COMPLETIONS	6	432	30.7	30.7	72.3
UNKNOWN	7	390	27.7	27.7	100.0
	TOTAL	1407	100.0	100.0	

Mean	5.116	Mode	6.000	Std Dev	1.853
Minimum	1.000	Maximum	7.000		
Valid Cases	1407	Missing Cases	0		

COMPLETIONS WHO ACCOMPLISHED GOALS

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	1252	89.0	89.0	89.0
ADVANCE OTHER PROG	1	8	.6	.6	89.6
PASSED GED	2	54	3.8	3.8	93.4
COMPLETE ALL GOALS	3	19	1.4	1.4	94.7
COMPLETE AT LEAST 1	4	73	5.2	5.2	99.9
	8	1	.1	.1	100.0
	TOTAL	1407	100.0	100.0	

Mean	.336	Mode	.000	Std Dev	1.022
Minimum	.000	Maximum	8.000		
Valid Cases	1407	Missing Cases	0		